

Project “Leading and Managing Change in Higher Education”
(La MANCHE)

Tempus IV Programme



Tempus



Changing Higher Education Institutions in Societies in Transition

In-depth Study Report

2014

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Changing Higher Education Institutions in Societies in Transition

In-depth Study Report

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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ISBN 978-954-635-012-1

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1. Introduction

The Changing Higher Education Institutions in Societies in Transition In-depth Study Report is developed in the framework of the project Leading and Managing Change in Higher Education (La MANCHE). The La MANCHE project is funded by the European Commission within the Tempus IV programme for support of the higher education modernisation processes in the European Union' surrounding area.

The La MANCHE project's overall objective includes building governance and management capacities in the 23 higher education institutions from five Partner Countries in Eastern Europe, namely Armenia, Belarus, Georgia, Moldova and Ukraine. In addition, over a period of 36 months, the project will contribute to the initiation of a sustainable dialogue on higher education institutional reforms among relevant stakeholders. In particular, the La MANCHE project focuses on activities aiming at empowering students to become more involved in decision making processes at the higher education institutions.

The wider project objective is to be achieved through eight specific objectives, one of them dedicated to mapping out the broader environmental and socio-economic conditions in which the higher education modernisation processes evolve. In this regard, the partner institutions will also analyze the local trends and locally developed good practices of dealing with change at institutional level. The current report Changing Higher Education Institutions in Societies in Transition aims at fulfilling this specific project objective and represents a major outcome of the activities in Work Package 3. The chief end of this report is not only to reveal the ongoing changes at societal and institutional levels by taking a snapshot of these - through the means of self-reflection, this report aims at making the Partner Countries institutions involved conscious of their achievements and accomplishments. Subsequently, the report could also show directions in which the institutions shall progress on their learning journey towards innovation and sustainable change.

It goes without saying, that a precise description and understanding of the processes of change and transformations that are currently ongoing in the five Partner Countries of Eastern Europe is a major precondition for effective change management and leadership at institutional level. In other words, it would be impossible for the institutions' senior management to inspire and introduce changes within the universities if the academic communities are not aware of the bigger picture and are not familiar with the processes of change outside the institution. In the framework of Work Package 3, the 23 La MANCHE Partner Countries institutions have developed case studies in which they have presented and analyzed different processes of change and modernisation currently ongoing in their higher education systems or in the societies as a whole. Subsequently, in the case studies, the partner institutions have described different ways in which major local or global trends and demands in higher education are addressed and have been embedded at institutional level.

Typically, the case study is deemed a user-friendly framework to capture, present and promote examples of good practices. The case study was chosen as a tool in Work Package 3

and the 23 case studies developed by the 23 Partner Countries in the La MANCHE project constitute the major part of the current In-depth Study Report.

The reason behind choosing the case study as a tool in Work Package 3 originates in the fact that as a rule, the case study would focus on a certain challenge and would show a successful way of dealing with it. Simply put, the case study is a story-telling of a particular problem and a possible solution for it. A well-written case study would report on the innovative dimension of the good practice presented, the challenges faced and the lessons learnt. Ideally, the case study is a reflective account of a process that enables different stakeholders and prospective readers to understand what was done, how it was done, who was involved, what went wrong or well, what could have been done differently etc. A good case study not only provides detailed description of the problem and the solutions, but also includes a critical and objective analysis of the described processes. These ambitious goals were set up and formulated in the case study template project partners from the EU had developed in the initial stage of Work Package 3.

The case study template (Annex of the current report) was circulated among the Partner Countries institutions in the project in early summer of 2013. It included an introductory part providing guidance on the content and outline of the case study. For the purposes of the In-depth Study Report and from consistency point of view, the case studies to be developed had to cover the following two main parts:

- Analysis of a challenge or a transformation process underway in the respective country or within its higher education system
- Detailed case study on a good practice from the respective institution of addressing this challenge and embedding change at institutional level.

The indicative but by far not exhaustive list of challenges to be addressed by the case studies in the report included internationalization, increasing competition among higher education institutions, decreasing public funding and limited financial resources, outdated curricula and teaching and delivery methods, irrelevance of graduates' skills to labour market needs, students dropping out, demographic problems leading to enrolment decrease, weak links between education, research and innovation, increasing use of ICT in education, weak knowledge-transfer infrastructure at the higher education institutions and lack of entrepreneurial, creative and innovation skills, reforms in the national legislation leading to major transformations at institutional level, specific transformations or changes in the political and economic environment that had a major impact on the institution, etc.

In the current report, the 23 case studies are grouped around the main challenges these deal with and in the light of the five key priorities and areas of intervention the European Higher Education Modernisation Agenda from 2011 outlines, namely:

- Increase of attainment levels to support economic growth and societal and personal prosperity
- Improvement of quality and relevance of the teaching and learning
- Promoting higher education internationalization
- Strengthening the knowledge triangle by linking education, research and business
- Creating effective institutional management and sustainable funding mechanisms.

The 23 case studies of good practices in dealing with change at institutional level comprise the main part the current In-depth Report Changing Higher Education Institutions in Societies in Transition. The case studies compendium is preceded by an introductory comparative analysis of the impact of economic and social transformation on the higher education systems and institutions in the five Partner Countries. The aim of the introductory part prepared by EU experts in the project is to shed light on the advantages of the locally developed good practices and to assess their transferability in other Partner Countries and institutions.

2. Economic and social transformations in Armenia, Belarus, Georgia, Moldova and Ukraine and their impact on the higher education systems and institutions

The current report aims at revealing social and economic changes and transformations in the societies in transition and their impact on the higher education institutions. Since the dissolution of the Soviet Union, most countries in Eastern Europe including the five La MANCHE Partner Countries have embarked on a long and often challenging journey of political, social and economic transformations and reforms. This learning journey is often defined as a period of transition. People everywhere in the world aspire to democracy and want to live in societies with stable institutional framework where the rule of law and the respect for and protection of human rights are leading and the social security and economic prosperity are the privilege of everyone.

The societies in transition, despite the local peculiarities these could have, show some common features and face some common problems. These may include underdeveloped and poorly functioning market economy, lack of sufficient capital and public funding, social tensions and political instability, resistance to modernisation and change stemming in old beliefs and habits or in fear of the new and unknown. The transition processes may involve uncertainty and risks. As mentioned in the Joint communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions from 2012 on the EU support for sustainable change in transition societies, these processes are by far not irreversible and can fail, dragging the societies into an even deeper political, social and economic crisis.

It goes without saying that the fragile nature of the social and economic processes in the transitional societies deeply affects their higher education systems. It seems that societies which are undergoing rapid political, social and economic transformations have a collective experience of these changes' implications on their higher education systems. Higher education systems in the societies in transition are much more vulnerable and exposed to higher risks than the education systems in societies with stable inclusive democracies and functioning market economies. Sometimes higher education systems in societies in transition could be also exposed to political instability and even political pressure. The lack of stable legal framework or broad consensus among stakeholders on major issues and policies may also create challenges and affect the every-day functioning of the higher education institutions.

Very often, in the transitional economies, far less funding per student is spent in the higher education system. On one hand this is due to limited public funding and on the other hand is the consequence of lacking mechanisms for attracting private funds in higher education. This ultimately leads to problems related to outdated and often inadequate academic facilities and lack of new up-to-date equipment and libraries. The reduced public funding due to austerity measures has direct impact on the teaching processes and the quality of education. Faculty and administration are less motivated as they are insufficiently rewarded for their

work. The opportunities for further training and professional development are limited and skills shortages in human resources are not timely addressed. This could easily lead to brain drain, unwillingness to commit to an academic career, low prestige of the academic career in society, unemployment etc. Human resource management weaknesses have also been subject of the analysis conducted by the EU experts in the La MANCHE project in the External Assessment Report in Work Package 2.

The pessimistic picture of human resource management would be not so dramatic, if it would not go hand in hand with low quality of teaching and research at the higher education institutions leading to unsatisfied students and poorly qualified and unsuccessful graduates. The links between the presence of labour force equipped with the right skills and knowledge and the performance of the economy are evident. Education also could enhance the innovation capacity and the technology readiness in the economy and society at large. The relation between education and growth is also at the heart of the Europe 2020 Strategy for the EU's development until 2020. In addition, education is considered a key instrument for building civil society of informed and socially responsible citizens.

One of the possible explanations for the fact that the societies in transition and more specifically the five La MANCHE Partner Countries share quite lot common features in their higher education systems development could be sought in these countries' similar competitiveness indexes. According to the World Economic Forum's Global Competitiveness Report (GCR) for 2013 – 2014 Armenia ranks 79., Georgia 72., Moldova 89. and Ukraine 84. in the global competitiveness ranking covering 148 countries. There is no data included for Belarus in the GCR. The national competitiveness is studied and benchmarked based on an array of factors which in one way or another determine the countries productivity which on the other hand is linked to the prosperity to be achieved by the economy. The GCR indicators include, inter alia, such efficiency enhancing factors as higher education and training, technology readiness and innovation factors.

GCP defines three main stages in the development of the countries, namely factor driven (1. stage), efficiency driven (2. stage) and innovation driven (3. stage) economies, as well as and two transition stages, the one between 1. and 2. stage and the one between 2. and 3. stage. According to GCR Armenia and Moldova find currently themselves in transition between the factor driven and efficiency driven economies, whereas Georgia and Ukraine are deemed to have reached the efficiency driven economy stage. Among the 28 EU member states only Bulgaria and Romania economies are defined as efficiency driven. All other 26 EU member states have either innovation driven economies or find themselves in the stage of transition between efficiency driven and innovation driven economy. It shall be noted that this report was drafted before the events in Ukraine in early 2014 whose impact on the country's economy and competitiveness is currently hard to predict.

In order to assess the impact of the economic and social transformations' impact on the higher education systems in Armenia, Belarus, Georgia, Moldova and Ukraine, it would be worth having a closer look at these countries' recent macro-economic performance. The information in the tables below originates from Eurostat's European Neighborhood Policy Countries' report published in 2013 and includes inter alia information on macro-economic indicators having direct impact on the higher education systems. In respect with the higher

education institutions prospective enrolment in the five La MANCHE countries it shall be noted that the percentage of population aged under 15 in 2011 in all of them is similar to the EU average of 16%. This could allow us to predict that in the near future the number of high school graduates in the five La MANCHE countries will not see an increase and higher education institutions in these countries, like in many EU countries, will face challenges in enrolment. Increased competition among the higher education institutions due to demographic reasons is an issue a number of countries in the world are dealing with and the La MANCHE countries are no exception.

Among the five Partner Countries only Armenia and Georgia have a positive annual population growth rate of 0.1% which is however still below the EU average of 0.4%.

Table 1: Population indicators, 2011

	Population, as of 1 January (1 000)	Male (1 000)	Female (1 000)	Population, average annual growth rate 2000 to 2011 (%)
EU-27 (1)	502 407	245 302	257 105	0.4
AM	3 263	1 584	1 679	0.1
BY	9 481	4 408	5 073	-0.5
GE	4 469	2 127	2 342	0.1
MD	3 560	1 712	1 848	-0.2
UA	45 598	21 033	24 566	-0.7

When assessing the impact of the social and economic processes on the higher education systems, it is worth having a look also at the countries' GDP growth, inflation, GDP per capita and unemployment rates. The analysis of Eurostat from 2013 on the essential macro-economic indicators in the European Neighborhood Policy Countries suggests that the global financial crisis has had a deep impact on the EU-27 with GDP declining by 4.3% in 2009. In the majority of the Eastern European countries being part of the European Neighborhood Policy GDP also contracted dramatically in 2009 after a period of sustained economic growth. In 2010 a strong recovery was registered. The GDP dropped in Armenia and Ukraine in 2009 by 14.1% respectively 14.8% only to rebound by 2.2% and 4.1% in 2010.

Table 2: Real GDP growth (% change compared with previous year)

	2008	2009	2010	2011
EU-27	0.3	-4.3	2.1	1.5
AM	6.9	-14.1	2.2	4.7
BY	10.2	0.2	7.7	5.3
GE	2.3	-3.8	6.3	7.0
MD	7.8	-6.0	7.1	6.4
UA	2.3	-14.8	4.1	5.2

Table 3: Inflation (% change compared with previous year)

	2008	2009	2010	2011
EU-27	3.7	1.0	2.1	3.1
AM	9.0	3.4	8.2	7.7
BY	14.8	13.0	7.8	53.2

GE	10.0	1.7	7.1	8.5
MD	12.7	0.0	7.4	7.6
UA	25.2	15.9	9.4	8.0

Table 4: GDP per capita at current market price (EUR)

	2000	2004	2008	2009	2010	2011
EU-27	19 000	21 700	25 000	23 500	24 500	25 100
AM	641	897	2 454	1 912	2 147	2 231
BY	1 503	1 908	4 339	3 718	4 383	4 498
GE	749	956	1 989	1 760	1 978	2 310
MD	382	579	1 152	1 091	1 230	1 413
UA	689	1 101	2 663	1 828	2 245	2 603

Table 5: Unemployment rate (% of the total labour force)

	2000	2004	2008	2009	2010	2011
EU-27	8.8	9.3	7.1	9.0	9.7	9.6
AM	:	31.6	16.4	18.7	19.0	18.4
BY	2.1	2.5	0.9	0.9	0.8	0.7
GE	10.3	12.6	16.5	16.9	16.3	15.1
MD	8.5	8.1	4.0	6.4	7.4	6.7
UA	11.6	8.6	6.4	8.8	8.1	7.9

Further insight into the economic and social developments in the five La MANCHE Partner Countries is provided in the World Bank's reports on these countries. According to the information on Armenia published on the World Bank's website, the country's economy has undergone significant transformation since its independence. The World Bank reports on the existence of a market-oriented environment generated through sustained growth, ambitious reforms and external flows of capital. The recent global financial crisis however is said to have strongly affected the economic performance and double digit growth rate in 2009 have been reduced to 3.2 percent growth in 2013. Based on its per-capita GDP the country is considered a lower middle-income country. The recent financial crisis has had a profound effect on the poverty rate in the country which in the period of 2008 – 2011 has increased from 27.6% to 35%. The table below presents data on Armenia's Global Competitiveness Index (GCI) obtained from the most recent GCR.

**Armenia: Global Competitiveness Index
GCI 2013–2014**

Rank (out of 148)

	79
Basic requirements (40.2%)	73
Institutions	65
Infrastructure	80
Macroeconomic environment	64
Health and primary education	85
Efficiency enhancers (49.9%)	85
Higher education and training	77
Goods market efficiency	58
Labor market efficiency	50

Financial market development	76
Technological readiness	72
Market size	117
Innovation and sophistication factors (10.0%)	88
Business sophistication	87
Innovation	103

Based on the report of the World Bank, compared to Armenia, the macroeconomic framework of Belarus shows a more optimistic picture. Until 2008 Belarus has had a strong and steady growth which was however significantly slowed down following the global economic and financial crisis in 2008. Despite the fact that the economic growth was restored in 2013, the overall macroeconomic stability is deemed fragile and exposed to risks. The rapid economic growth in the past decade has significantly contributed to poverty reduction in the country despite the modest poverty increase related to the recent economic crisis. Although at first glance Belarus macro-economic performance looks quite promising, the World Bank report suggests deep structural constraints in Belarus linked to the state-centered economic model applied by the country's government.

In terms of Georgia, the World Banks' prognosis is also relatively optimistic. According to the information published on the World Banks' website, in the period of 2003 – 2012 Georgia achieved robust economic growth following structural reforms that stimulated investment and capital flows. These reforms have led to improved business environment, consolidated public finances, improved infrastructure. However, despite the positive signs registered, unemployment remains the biggest challenge for the government. According to the data provided, the majority of the work force (more than 55%) is still currently employed in agriculture, although growth in the services sector has also been registered. The table below includes information on Georgia's competitiveness performance and potential:

Georgia: Global Competitiveness Index	Rank (out of 148)
GCI 2013–2014	72
Basic requirements (40.0%)	57
Institutions	64
Infrastructure	56
Macroeconomic environment	61
Health and primary education	70
Efficiency enhancers (50.0%)	86
Higher education and training	92
Goods market efficiency	67
Labor market efficiency	40
Financial market development	75
Technological readiness	68
Market size	103
Innovation and sophistication factors (10.0%)	122
Business sophistication	120
Innovation	126

In regard of Moldova the World Bank report suggests that Moldova's economy over the last few years is considered relatively strong despite significant macroeconomic risks. The country has achieved significant poverty reduction. Based on the data of the World Bank in the period of 2006 – 2012 Moldova was among the world's top performers in terms of poverty reduction. Nevertheless, the country still remains one of the poorest in Europe. Evidence suggests that over the last decade the country has made significant steps ahead in its economic and political transition, but according to the World Bank still much remains to be done. This is also reflected in the data on Moldova GCI which shows that the country lags behind in a number of areas.

Moldova: Global Competitiveness Index GCI 2013–2014	Rank (out of 148)
	89
Basic requirements (59.3%)	97
Institutions	122
Infrastructure	88
Macroeconomic environment	77
Health and primary education	93
Efficiency enhancers (35.6%)	102
Higher education and training	90
Goods market efficiency	107
Labor market efficiency	95
Financial market development	105
Technological readiness	64
Market size	124
Innovation and sophistication factors (5.2%)	133
Business sophistication	125
Innovation	138

The vulnerability of the social, economic and political processes in societies in transition is made evident by the highly concerning developments and events unfolding in Ukraine in the beginning of 2014. The data of the World Bank and the World Economic Forum on Ukraine which is available at the time this report is being drafted, does not reflect the consequences and impact of these events on the country's economic and social development. It is clearly stated though that the country's top concern is the state of its economy, the resolution of the political crisis and the restoration of the confidence in the state institutions. The weak economic growth from the last two years is deemed fragile. In terms of education, the World Bank reports outlines the high levels of literacy and school enrolment in the country which, however, have not led to better skilled and more efficient labor force. Unemployment among university graduates remains high and they often end up in jobs which do not match their skills and expertise. The GCI for Ukraine shows still a quite positive performance of the country in the field of higher education as Ukraine 43 in the higher education and training indicator.

Ukraine: Global Competitiveness Index GCI 2013–2014	Rank (out of 148)
	84
Basic requirements (40.0%)	91
Institutions	137
Infrastructure	68
Macroeconomic environment	107
Health and primary education	62
Efficiency enhancers (50.0%)	71
Higher education and training	43
Goods market efficiency	124
Labor market efficiency	84
Financial market development	117
Technological readiness	94
Market size	38
Innovation and sophistication factors (10.0%)	95
Business sophistication	97
Innovation	93

When looking closer at the higher education systems of Armenia, Belarus, Georgia, Moldova and Ukraine, it is worth comparing these countries' overall performance concerning the Higher education and training indicator included in the GCI for 2013 – 2014. Compared to Ukraine's 43. place in the ranking, Armenia ranks 77., Moldova is 90. and Georgia is 92. The higher education pillar covers eight indicators, namely: (1) secondary education enrollment, (2) tertiary education enrollment, (3) quality of the educational system, (4) quality of math and science education, (5) quality of management schools, (6) internet access in schools, (7) availability of research and training services and (8) extent of staff training.

In terms of tertiary education enrolment, Ukraine is by far the best performer in the region ranking 10. in the world and followed by Armenia placed 51., Moldova on 66. and Georgia on 77. Concerning the quality of education all five countries lag behind with Armenia placed 69., Ukraine 79., Georgia 105. and Moldova 115. in the world. In terms of availability of research and training services the four countries paint an even gloomier picture with Armenia ranking 119., Georgia 130., Moldova 128. and Ukraine 92. in the world.

The above quoted figures from the current GCR concerning the La MANCHE Partner Countries certainly reveal the presence of serious shortages and pitfalls in these countries' higher education systems. The main challenges being faced by the higher education systems in Armenia, Belarus, Georgia, Moldova and Ukraine are subject of the Overview of the Higher Education Systems in the Tempus Partner Countries (Eastern Europe) published by EACEA in 2012. In regard to Armenia, the study suggests inter alia such problems as lack of public funding to stimulate reforms in higher education, top-down management risking bureaucracy, lack of engagement and ownership of the reforms on the side of the academic community, lack of long-term strategy on the Bologna system, inconsistency of the existing legislation with the European Higher Education Area principles, weak links between higher education and society, quality assurance mechanisms, promotion of mobility etc.

In the report of the World Bank from 2013 on Addressing Governance as the Center of Higher Education Reforms in Armenia a significant progress in reforming the higher education system of Armenia since joining the Bologna Process in 2005 is recognized. However, to maximize the potential of the ongoing reforms, the reports recommends the further development of the higher education system. According to this report, the current underperforming of the system could be overcome by a series of measures and actions to be undertaken. These include revision of the regulatory framework to overhaul the existing legislation and to redefine the roles of the government and the higher education institutions. The report suggests that the right balance between autonomy and accountability shall be found in the Armenia higher education system. In addition, the World Bank urges the establishing of coherent regulatory framework.

The second important recommendation refers to the establishing of a diversified higher education system where education and research are well-integrated. The strengthening of the quality assurance system by supporting the Quality Assurance Agency, developing a new quality assurance model, developing a monitoring and evaluation mechanism and establishing labor market observatories comprises the third recommendation of the World Bank. The last two recommendations of the World Bank represent actually the fifth main area of intervention in the European Higher Education Modernisation Agenda. These refer on one hand to diversifying the funding in higher education by enhancing the ongoing reforms and mobilizing private funding. On the other hand, the World Bank outlines the importance of capacity building in Armenia both for higher education policy makers and at institutional level.

In the framework of the La MANCHE project in Work Package 2 the four Armenian institutions involved have been asked to provide an insight into the processes of change and the biggest challenges compromising these at institutional level. The External Assessment Report prepared based on the results of the Armenia online focus group and the auditing and self-assessment report suggested the following main obstacles for change at institutional level: lack of funding, lack of funding diversification mechanisms, low wages, unmotivated staff, inefficient distribution of tasks and responsibilities, administrative and legislative burdens. In the current Changing Higher Education Institutions in Societies in Transition In-depth Study Report the four Armenian institutions have presented good practices in dealing with issues related to:

- outdated curricula and weak links between education and business: Armenian National Agrarian University (ANAU): Outdated curricula and teaching and delivery methods and its conformability with the contemporary labour market needs; State Engineering University of Armenia (Polytechnic) (SEUA): Novel Approaches to the Design and Implementation of Dynamic Curricula;
- quality assurance and internationalization: Yerevan State University (YSU): Quality and internationalization;
- tackling corruption and maladministration: Gavar State University (GSU): Academic honesty policy.

In regard to Belarus, EACEA's report from 2012 refers to higher education system challenges related inter alia to the demands to introduce innovative and relevant curricula and delivery modes, integration of ICT in higher education, updated funding mechanisms and improved

facilities, enhancement of overall relevance of the higher education to the needs of the society and the labour market and the quality and accountability of the system towards the stakeholders. The status quo of the higher education system is also examined in details by Vladimir Dounaev in his article *Contradicting Ideas for Education Policy* published in the *Belarusian Yearbook 2012*. The article outlines the following main trends and issues in the Belarusian higher education system (Dounaev 2012: 177):

- refusal to modernize the system
- gradual state funding cuts in education
- making the higher education more widely available by increasing the amount of paid tuition
- cautious intervention by the Ministry of Education in the field of education which for a long time have been deemed to be the exclusive prerogative of the president and his administration.

Dounaev also concludes that the authorities in Belarus are working on limiting the opportunities for available, affordable education, which, however, by no means leads to involving the main stakeholders (students, business, parents) in the process of decision making and management of the system and the institutions. The results of the auditing and self-assessment reports in La MANCHE clearly confirmed the lack of funding and other resources as well as the rigid conservative administrative culture as main obstacles for change. Along with registered weaknesses in the human resource management system, the project partners pointed out the conservative outdated curricula and teaching methods as the main factor for the lack of innovation. The case studies prepared by the four project partners from Belarus as a contribution to the present report show a more positive picture and refer in particular to good practices in dealing with following challenges:

- weak links between education and business: Vitebsk State Technological University (VSTU): University Techno Park: The Way From Theory To Practice;
- ICT use in higher education: P. O. Sukhoi State Technical University of Gomel (GSTU): Activization of applying computer technologies in higher education;
- reduced public funding: Belarusian Trade and Economics University of Consumer Cooperatives (BTEU): Management of educational programmes integrated with vocational secondary education;
- demographic and societal trends leading to enrolment decrease: Belarusian State Economic University: Students' activity to encourage school-leavers enter BSEU.

In regard to Georgia, the afore mentioned EACEA report from 2012 lists among the main challenges for the country's higher education system the lack of time and financial resources to implement reforms, the low level of engagement between higher education institutions and their external stakeholders, shortage of educational managers and leaders, insufficient recognition of the Georgian higher education system abroad. Some of these shortages like the lack of educated leaders and qualified management staff in higher education have been also confirmed by the results of the External Assessment Report in Work Package 2. In the current report the four La MANCHE project partners have chosen to present successful good practices in dealing with following issues:

- internationalization of education and research: Ivane Javakhishvili Tbilisi State University (TSU): Internationalization as a Tool for Development; International Black

Sea University (IBSU): Analyzing the outcomes of the International Young Inventors Project Olympiad in Tbilisi, Republic of Georgia;

- reforms at national level affecting the every-day functioning of the higher education institutions: Caucasus University (CU): Government reforms and their effect on Higher Educational Institutions in Georgia;
- curriculum reforms with the aim of building decision making capacities and improving relevance of economic education to the business: Gori Teaching University (GTU): Modernisation and Management of Curricula Design for the Development of Economic Education “Decision Making Technology in Practice for Social Policy Analysis”.

In the External Assessment Report prepared by EU experts based on the auditing and self-assessment reports from Moldova, the main weaknesses registered in the country’s higher education system which could threaten further reforms and development, are:

- strict hierarchy
- bureaucracy
- lack of autonomy
- constant lack of sufficient public funding.

In addition, the outdated curricula and the low level of innovation and technology readiness are also among the challenges universities in Moldova have been facing for quite some time. Despite these difficulties, a significant array of reforms has been already carried out in the field of higher education in Moldova. As mentioned in EACEA report from 2012 in regard with Moldova, there is a certain concern about the quality and the efficiency of these reforms. In the current report the four partners from Moldova presented good practices of embedding change at institutional level when dealing with the following challenges:

- decreasing public funding emphasizing the need to explore and introduce new funding sources and opportunities: Moldova State University (MSU): Public-private partnership “Development and modernisation of students accommodation infrastructure Moldova State University”;
- increasing use of ICT in education: Comrat State University (CSU): Implementation of IT technologies at the Comrat State University;
- irrelevance and mismatch of graduates’ skills to labour market needs: Alecu Russo Balti State University (USB): The experience of social partnership and cooperation with labour market at Alecu Russo Balti State University;
- improvement of the quality of teaching and learning: State Agrarian University of Moldova (SAUM): Experience in Assessing the students’ knowledge and skills at State Agrarian University of Moldova.

In respect of Ukraine, the major trends and challenges outlined in the report of EACEA from 2012 present an extensive list which touches upon such universal issues as mismatch of education and training with the labor market needs and low graduates’ employability, poor access to education, lack of institutional autonomy and insufficient students’ involvement in institutional governance processes, internationalization, complete alignment of the higher education system with the Bologna process etc.

In the External Assessment Report in Work Package 2 the inquired senior and middle management staff members of the Ukrainian higher education institutions involved in the project have outlined also the lack of autonomy, lack of sufficient funding, financial pressures, growing competition, the lack of motivation and the outdated curricula as the major challenges for the universities. The overriding conclusion of the analysis conducted on the challenges for change in Ukrainian universities is of an education system suffering from a resistance to change at many levels, which on the one hand may stem from a reluctance of individuals to change, and on the other is a consequence of a system characterised by a lack of independent decision making, a lack of financial support and inexperience in managing change.

In the current report the seven Ukrainian institutions have shared good practices in dealing with such major challenges in higher education as:

- internationalization of curricula: National Technical University Kharkiv Polytechnic Institute (NTU KhPI): Internationalization through international education programme implementation;
- mismatch of graduates' skills to labour market and society needs: Volodymyr Dahl East Ukrainian National University (EUNU): Development of Partnership between University and Enterprises; Lutsk National Technical University (LNTU): Mismatch of skills of graduates to labor market needs: problems and methods of overcoming them;
- increasing competition among higher education institutions: Lviv Academy of Commerce (LAC): Competitiveness on education market of Ukraine: challenges for Lviv Academy of Commerce;
- weak knowledge triangle infrastructure: Cherkasy State Technological University (CSTU): Weak transfer of knowledge infrastructure of higher educational institutions and the lack of enterprising, creative and innovative skills; Lviv Polytechnic National University (LPNU): Development of the University Innovation Activity;
- Lifelong learning and continuing education: Odessa National Economic University (ONEU): Management of lifelong education system at the university.

3. Overview of the good practices developed at the La MANCHE Partner Countries higher education institutions

The case studies comprising the Changing Higher Education Institutions in Societies in Transition In-depth Study Report share universities' good practices of managing change and adjusting to external demands and trends at institutional level. The report reveals the changing contexts in which the 23 La MANCHE Partner Country institutions operate as well as their responses to external pressures and imperatives. The Bologna process and the level of integration in it achieved by the different La MANCHE Partner Countries is a recurring topic in the majority of the case studies. With the exception of Belarus which is not a Bologna signatory country, La MANCHE institutions from Armenia, Georgia, Moldova and Ukraine refer to the processes of joining the Bologna process in 2005 as an incentive for change and major transformations in the higher education systems. The Bologna cycle structure introduction, the ECTS implementation and the introduced quality assurance practices are considered important tools for improving the quality, relevance and transparency of the study programmes and for integration in the European Higher Education Area.

The 23 case studies in the report certainly present diverse and exciting snapshots of multifaceted and complex processes currently ongoing in the five La MANCHE project partner countries' higher education institutions. The case study assignment suggested the following major challenges which are deemed universal in higher education:

- internationalization
- increasing competition among higher education institutions
- decreasing public funding and limited financial resources
- students drop out
- demographic problems leading to enrolment decrease
- outdated curricula and teaching and delivery methods
- irrelevance of graduates' skills to labour market needs
- weak links between education, research and innovation
- increasing use of ICT in education
- weak knowledge-transfer infrastructure at the higher education institutions and lack of entrepreneurial, creative and innovation skills
- reforms in the national legislation leading to major transformations at institutional level
- specific transformations or changes in the political and economic environment that had a major impact on the institution.

Due to the complex nature of the higher education modernisation processes, very often the presented good practices address more than one issue and suggest solutions to more than one question. For instance, the case study of EUNU on Development of Partnership between University and Enterprises primarily focuses on the strengthening the links between the university and business companies with the aim to improve the offered education's relevance. The established cooperation between the university and six German companies however contributes undoubtedly to the internationalization of the institution as well.

The case study of ONEU on Management of Lifelong System at the university also presents a good practice on curriculum design and development with the involvement of international academic partners. The internationalization of the curriculum by introducing double degree programmes with international partners or involvement of international renowned experts in the study programmes design, update and/or delivery is presented in the case studies of NTU KhPi, LAC and ANAU as well. BTEU's case study on Management of Educational Programmes Integrated with Vocational Secondary Education is another example of good practice addressing more than one issue, namely decreasing public funding and limited financial resources, demographic problems leading to enrolment decrease, provision of access to higher education to broader audience.

It goes without saying that measures to modernize the outdated curricula shall be aimed at improving the relevance of the degrees awarded towards the education market's needs and resolving the issue of mismatch of graduates' skills and knowledge towards the labor market needs. The case studies of SEUA on Novel Approaches to the Design and Implementation of Dynamic Curricula Based on University – Industry Cooperation Models is an excellent example for building bridges between education and business by applying two different models, the first one applicable when “university goes to the industry”, and the second one, when “the industry comes to the university”.

When looking at the 23 good practices, it stands out that a significant number of these concerns the modernisation of education which is the primary and certainly the oldest university mission. Along with the already mentioned case studies presenting internationalized curricula and study programmes delivered with strong business input, the urge to integrate ICT as part of the efforts to modernize the education processes is described in the case studies of CSU on Implementation of IT technologies at Comrat State University and the one of GSTU on Activation of applying computer technologies.

Some of the case studies reveal very positive trends in terms of achieving the so called third mission of the universities related to technology and knowledge transfer and contributing to building an entrepreneurial university. It is a wide spread perception that knowledge transfer and engaging with the higher education stakeholders and the local community is not about doing something different. Knowledge transfer is about doing the same old things like education and research, but differently. It is difficult to decide to what extent the knowledge transfer processes which are described in the case studies are conscious decisions taken at institutional level and reflected in the institution's mission and vision statement or these simply are the result of intuitive endeavors and the efforts of small innovative minded teams at the institutions.

Nevertheless, the practices presented in the afore mentioned SEUA case study in Armenia, the case study of CSTU in Ukraine on Weak Transfer of Knowledge Infrastructure at Higher Education Institutions and the Lack of Entrepreneurial, Creative and Innovative Skills, the LPNU experience in Development of University Innovation Activity in Ukraine, the VSTU's Techno Park in Belarus and USB's case study on Experience of Social Partnership and Cooperation with Labour Market in Moldova show a rather optimistic picture in the La MANCHE Partner Country universities. One could conclude that despite the higher education systems' general non-modernized and conservative nature and the above listed shortages

and weaknesses, there is a clear sign that universities in the Partner Countries have already started doing things differently and have created dynamic and changing environments.

When comparing the 23 case studies in the report, it stands out that the majority of the good practices are related to the implementation of a series of measures or even a complex structured policy at the institution. Only a very limited number of case studies are much focused and have been developed on the occasion of a concrete situation and to solve a specific issue. For instance the creation of public-private partnership at MSU has been prompted by the efforts to attract funding and renovate the dormitory facilities of the university. The rest of the case studies reflect more or less long-term oriented approaches which address general trends and developments.

In the report, the institutional good practices of dealing with changes and pressures coming from outside are grouped and presented in the context of the five main areas of intervention the European Higher Education Modernisation Agenda deals with. It is worth noticing that only two of 23 case studies address to some extent the issue of attainment. Increasing the number of graduates is possible through measures providing wider access to higher education to traditionally less represented social groups, reducing dropout rates and improving the relevance of the education. The BTEU case study describes the institution's policy to attract graduates of vocational secondary schools to continue their studies at BTEU. This on one hand contributes to increasing the enrolment figures at the institution and to diversifying the funding sources at the institution. The students on the other hand benefit from opportunities for study periods recognition and accreditation of prior learning.

The graduates of vocational secondary schools are entitled to shorten the period of study at BTEU provided they have been specialized in similar subject areas. Building bridges between different levels of the qualification framework by providing the option of study periods recognition could be considered an innovative measure and certainly contributes to improving the overall attainment level as more students are able to join the higher education system. Shortening the study periods within tertiary education system with the aim of joining the labour market sooner is a strategy applied in a number of European higher education systems as well. However, in terms of this good practice's transferability in other higher education institutions outside Belarus, it shall be noted that it could be applied only if the national legislation allows this.

Another good practice from Belarus which will eventually contribute to long term increases in the number of graduates is presented by BSEU. The good practice in the case study is prompted by the efforts to overcome the current decrease of enrolled students as a consequence of the demographic situation at the time of the perestroika. Raising awareness among prospective students on the learning opportunities provided by the higher education and career consulting, focusing on the international student admission and recruitment and improving the overall quality of the study programmes are measures which long term could certainly improve the enrolment figures at the institution. The good practices of BSEU are easily applicable at other institutions. In fact, in the context of the severe competition among higher education institutions worldwide it would be hard to find an institution which is not targeting actively prospective high school graduates or international students through the means of organized marketing campaigns.

After attainment, the second major area, where modernisation in higher education is urgent Europe-wide, concerns the quality and relevance of the education. The report of the European Commission on Improving the Quality of Teaching and Learning in Europe's Higher Education Institutions contains sixteen recommendations. These recommendations are addressed to different stakeholders in higher education such public authorities, institutional leaders, faculty, students. The recommendations define the stakeholders' engagement as a precondition for success. At institutional level the recommendations welcome inter alia students involvement and feedback, complex stakeholders involvement in curricula design, certified pedagogical training of teaching staff, improved human resource management aiming at teachers motivation and reward, improved student assessment mechanisms, career counseling and guidance, ICT use in teaching and improved digital skills of teachers, development of working internationalization strategies.

In the light of the quality of education topic, the good practice of YSU provides an insight into the sophisticated internal quality assurance system the institution has developed and is applying. The main groups of criteria the quality assurance policy at YSU covers include academic standards, programmes and courses, research, teaching staff, the processes of teaching and learning, student assessment, resources and facilities. The institution reports on the involvement of students and other major stakeholders in higher education as alumni and employers in all quality related processes at the institution. The good practice presented by YSU aims at achieving full compliance with the requirements of the European Association for Quality Assurance in Higher Education (ENQA) and concerns all processes of internal quality assurance. In addition to YSU, CU in Georgia also reports in its case study on a quality assurance related good practice and the changes occurred in the institution following the establishing of a specific Quality Assurance Department at CU.

SAUM's case study deals with the issue of quality too, but unlike YSU and CU, it does not focus on the whole system but deals with a particular problem, namely assessment of students' knowledge and skills. The implementation of ICT in the teaching and learning evaluation processes and the diversification of knowledge assessment tools could be certainly considered an efficient measure towards better quality of education. What makes, however, the assessment of SAUM students' knowledge and skills really innovative for Moldova and the other countries in Eastern Europe is the involvement of external experts. The external examination board is not only assigned with the tasks of objective evaluation but also contribute to strengthening the links of SAUM with business. A mention is made in the case study that the external board members are often former SAUM graduates which certainly creates a sense of belonging and enhances the links between SAUM and its alumni.

Among the 23 case studies in this report, nine present good practices aiming at improving the overall quality and relevance of the study programmes and education delivered. Four of the institutions (LAC, NTU KhPI, ANAU and GTU) report on development and design of innovative study programmes or the upgrade of already existing ones in line with the skills anticipations and requirement of the professional sector these prepare the labour force for. The modernisation of curricula at these institutions benefits from the input and expertise of international academic partners. The presented good practices on outdated curricula modernisation including the option of double degree award are certainly a bold and risky undertaking especially if national legislation barriers exist. These practices could be

transferred to other Partner Countries and institutions only if proper legislative framework is in place at national level and provided the institutions' faculty and senior management share similar views on innovation and internationalization of the curricula.

It shall be noted that in terms of bridging the gaps between the education and labor market, the university – industry models for cooperation applied at SEAU could be considered among the most innovative and successful in this report. In particular, mention shall be made on the establishment of SEUA Interfaculty Chair of Microelectronic Circuits and Systems which operates in the premises of SYNOPSIS – Armenia CJSC where 3rd and 4th year undergraduate and also master and PhD students study in real work environment. Such high level of synergy between education and the industry seem to be rare. The good practice presented may not be easily transferable to other higher education institutions, but it is still considered a successful one in the light of the statistics of the programme graduates' employability. According to the data presented in the case study, 100 % of the graduates end up working in IT companies in Armenia and 70% of all graduates are currently working for Synopsys Armenia.

The case studies of EUNU and LNTU from Ukraine also focus on strengthening the links between business and industry and the higher education institutions. At EUNU the list of areas where business and industry engagement is sought and nurtured at the institution include inter alia participation of employers in the content development and evaluation, provision of trainings for students and lecturers, provision of placement opportunities for the students, organization of trainings for students and lecturers at the institution, joint participation in applied research activities and events, recruitment of EUNU graduates etc.

The good practice presented by LNTU refers to the establishment of the Business Student Center. The Business Student Center seem to function as a Career Center providing career counselling services such as one-on-one consultations and trainings for students, collaboration with companies' human resource departments as part of the efforts to improve students employability skills, organization and facilitation of placements etc. Both institutions' practices are quite well spread across Europe and are deemed easily transferable to other academic environments and contexts as well.

When focusing on innovative teaching and learning methods with the aim improving the quality of teaching and learning, the integration of ICT in higher education is certainly one of the most obvious steps to take. CSU focusses in the case study on the introduction and application of ICT tools such as Wiki systems, Learning Management Systems, Thin-client classroom, Web-conferencing and Desktop sharing tools.

GSTU in Belarus on the other hand focuses on measures applied to enhance ICT use in the education process at the institution. Over the last four years 54% of all so called educational-methodological packages of subjects (EEMPS) have been designed, developed and uploaded on the institution's educational web-portal. Access is open to GSTU students and is restricted to prior registration. In 2014 the EEMPS will be revised and upgraded into electronic courses (EC). The ECs will have a unified structure and will along with the course description and the corresponding teaching and study materials include also materials for self-evaluation and for knowledge assessment. Both ICT practices in La MANCHE have high transferability potential

and in long term could contribute to significant improvement of the quality of the education as well as in the provision of access to education for broader audience.

The majority of case studies touch upon the topic of internationalization. As already mentioned, many of the case studies aiming at improving the quality and relevance of education have integrated the internationalization in their activities and the internationalization strategies are used as a tool for modernisation. The case study of TSU reveals the currently ongoing internationalization processes at the institution. Along with being active in international projects cooperation and facilitation of mobilities, TSU focuses and invests resources in the so called internationalization at home by attracting foreign professors to teach at TSU, supporting the delivery of double or joint degree programmes in foreign languages, improving foreign language skills of staff and faculty etc. The diversity and scale of measures applied at TSU in the field of internationalization is impressive and many of these could be transferred or are already implemented at other universities in the region. Another example for a La MANCHE institution with clearly defined international aspirations and achievements as described in the case study is YSU. Along with the topic of quality assurance system, YSU case study lists some of the institution's major accomplishments in the field of internationalization.

In terms of the La MANCHE Partner Country institutions' internationalization, it shall be noted that a large number of these refer in the case studies to Tempus and Erasmus Mundus projects the institutions have been or are currently involved in. Many of the case studies report on sustainable results and outcomes achieved in these international cooperation projects on which the institutions have been able to build on and bring these to a new level.

The interconnected nature of the different processes on higher education modernisation is also evident when analyzing the fourth main modernisation area, namely the knowledge and innovation triangle. Activities here are related to initiatives to support close and effective links between education, research and business – the three sides of the knowledge triangle. Some of the university – business cooperation related case studies were already mentioned above in regard with the education quality and relevance topic. In terms of university – business partnership it is important to outline here once again USB's extensive experience in building social partnerships. The institution seems to have established a well working and complex system for knowledge transfer with the business. USB reports on having developed and currently benefiting from a variety of opportunities for networking and collaboration with its social partners.

Special mention in regard with the knowledge triangle topic shall be made here about the case studies with strong emphasis on knowledge and innovation transfer. The case studies on the Techno Park at VSTU, the Innovation Office at LPNU as well as CSTU' Technological Incubator not only make an interesting reading but mark significant steps ahead towards the achievement of these institutions' third mission. In terms of applicability of these, it shall be noted that such type of initiatives especially in case of VSTU's Techno Park requires significant funding and investment, strong institutional support and the existence of long-term vision for institutional development.

Although comprising a very different type of activity, the case study of IBSU on the organization of the International Young Inventors Project Olympiad represents an interesting approach towards research and innovation. The annual event aims at encouraging young people and prospective university students to become involved with science and research. Long term, these types of measures could contribute to educating more young scientists and improving the research and innovation performance of the institution. The links created through this initiative between the different education levels of education could be very beneficial for the organization.

The fifth major area of intervention where the European Union Higher Education Modernisation Agenda recommends improvement is governance and funding. In the report only the case study of MSU deals directly with this issue and presents steps undertaken to diversify the funding opportunities at the institution. As already mentioned, the scarcity of public funding is one of the major features characterizing the higher education systems in the societies in transition. The establishing of public-private partnership with the aim of student accommodation infrastructure's renovation is deemed an innovative measure in the context of the higher education system in Moldova. The transferability of this good practice is subject to national legislation and highly dependable on the administrative system and culture in the concrete country. Mobilizing private funds in the public higher education institutions and joint collaboration between the public and private sector is certainly a step in the right direction which should be encouraged and supported at institutional and national level.

The case study of GSU in Armenia concerns the processes of institutional governance and provides an account of a good practice related to the introduction of academic honesty policy at the institution. The principles of the academic honesty philosophy have been turned into horizontal policy at the institution and this good practice seems to be very successful and at the same time easily transferable provided the proper institutional management support is in place. GSU reports that this measure at institutional level had been prompted by the efforts to combat corruption in the education sector endorsed by the anti-corruption strategy of the Republic of Armenia and the complex approach of the Ministry of Science and Education against the corruption phenomena in the education system. CU from Georgia is another La MANCHE institution which reports in its case study on the impact of national level policy measures to combat corruption in the sector. CU focusses inter alia on the introduction of unified national exams system in Georgia in 2005 which contributed to ceasing corruption in the process of granting student admission to universities.

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4. Management of Educational Programmes Integrated with Vocational Secondary Education

Belarusian Trade and Economics University of Consumer Cooperatives, Belarus

EXECUTIVE SUMMARY

The national education system of the Republic of Belarus is provided with lifelong education, and succession of levels and stages of education. Development of the lifelong education system assumes integration of vocational secondary and higher education. By implementing the current line of policy in the sphere of higher education, Universities of the Republic of Belarus carry on human resource development, through higher education integrated with vocational secondary education ((hereinafter – after Integrated Programme).

Education programmes are defined in the Belarusian Code of Higher Education 243-3 dated 13/01/2011 in Article 204 “Education Programmes of Higher Education”. The first stage of the higher education programme was first legislated. It allows students to obtain specialist qualifications through higher education, integrated with vocational secondary education (hereinafter – Integrated Programme). The reduction of the term of getting higher education is legislated in education standards of Belarusian higher education for those who get trained through the integrated education programme of higher education. Reduction of term of getting education is an attractive factor for students when considering the question of practicability of education continuation. There are 27 colleges in Belarus, and this fact assumes a wide number of potential applicants to HEIs. It should be noted that there is a need for development of a normative and legislative framework, regulated organisational conditions of getting higher education after integrated programmes.

BACKGROUND INFORMATION

The Belarusian Trade and Economics University of Consumer Cooperatives (BTEU) is the higher educational establishment of Belcoopsoyuz, which has the status of the state higher educational establishment. BTEU is one of two leading economic higher education institution of the Republic of Belarus, with a fifty-year history of training highly skilled economists, accountants and merchandisers. The structure of the University includes 3 departments of day-time education (Accounting and Finance Department, Economics and Management Department, Commercial Department), and two correspondence departments (Economics and Accounting Department, Commerce and Management Department).

At the moment, the University trains specialists in 14 specialties and their areas, and in 24 specializations of economics. These are classical “Economics and Management at Enterprise” “Accounting, Analysis and Audit”, “Merchandising”, and rather new specialties rapidly gaining popularity in labor market “World Economics”, “Management of Informational Resources”, and “Logistics. The list can be continued but the most important thing is that such a broad choice helps applicants to fully assess their potential possibilities and secure their favourite work afterwards.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Increasing competition among higher education institutions
Decreasing public funding and limited financial resources

THE WIDER CONTEXT

Development of lifelong education, and implementation of education programme of HE, integrated with education programmes of vocational secondary education (short term of getting education) in conditions of demographic problems and competition between HEIs. It is stipulated by State Programme of Higher Education Development for 2011-2015, approved by Decree of Council of Ministers of the Republic of Belarus №893 dated 01/07/2011.

There are 215 State and 12 private establishments of vocational secondary education; 45 State and 9 private HEIs. Most college leavers continue their studies at Universities. This makes it possible to solve the problem of decrease a number of applicants (school leavers). BTEU is situated in the Gomel Region and there is rather serious competition among Universities. There are 13 HEIs in the Gomel Region. The Region ranks next to the Minsk Region in terms of HEIs concentration: 7 of 54 HEIs and 6 of 18 HEIs branches (including foreign HEIs branches) working in the Republic of Belarus are situated here.

Table 1 – Information on HEIs and branches working in a territory of Gomel Region as of 01/08/2013 (according information from official web-sites).

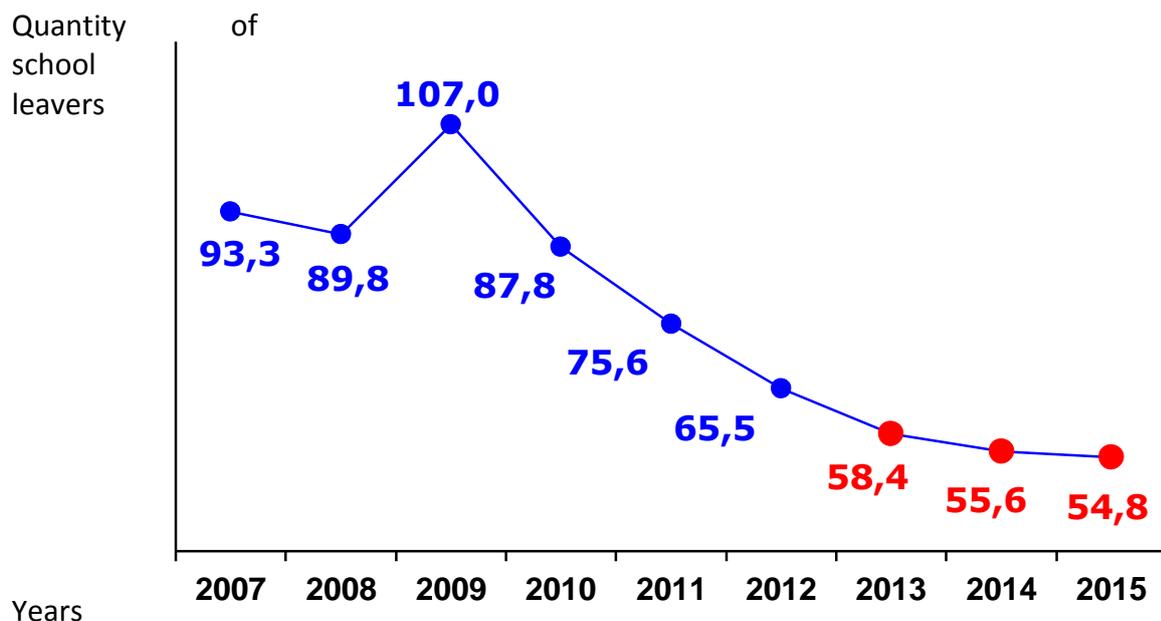
Higher education institutions	Form of property	Propose certain specializations (1st stage of higher education), similar to BTEU
1	2	3
<i>Higher Education Establishments</i>		
1 Gomel State University named after F.Skorina (GGU)	State	+
Gomel State Technical University named after P.O.Sukhoi (GGTU)	State	+
3 Belarusian State Transport University (BelSTU), Gomel	State	+
4 Gomel State Medical University (GSMU).	State	-
5 Mozyr State Pedagogical University named after I.P.Shamyakin (MSPU), Mozyr	State	-
6 Gomel Engineering of the Ministry for Emergency Situations of the Republic of Belarus (GEI MES),	State	-
7 Belarusian Trade and Economics University of Consumer Cooperatives (BTEU), Gomel	Private	+
<i>Branches of HEIs</i>		
8 Gomel branch of International University MITSO	Private	+
9 Poleski branch of Belarusian State Agricultural Academy (BSAA), Kalinkovitchir. Калинковичи, (на базе Полесского государственного аграрного колледжа)	State	+

10 Buda-Koshelevo branch of Belarusian State Agrarian and Technical University (BSATU) as a part of Buda-Koshelevo Agrarian and Technical College)	State	-
11 Rechitsa branch of Sate Academy of Veterinary Medicine (as a part of Rechitsa State Agrarian College)	State	-
12 Gomel branch of Belarusian State Academy of Music	State	-
13 Branch of Belarusian State Culture and Art University, Mozyr	State	-

Besides, Russian HEI provides services in higher economic education using distance and correspondence education through their Belarusian partners in Gomel Region. You can monitor their activity via the Internet. Assessing Canter of Academic Resources of Modern Humanitarian Academy and tutor office of distance on-line education of Moscow State University of Economics, Statistics and Informatics. They are indirect competitors of BTEU. According to information in Table 2, almost half of HEIs and branches of HEIs (5 of 13) working in Gomel Region are direct competitors of BTEU in the field of training of economic and administrative specialists with specializations that are similar to BTEU ones.

In comparison with 2011, specific weight of BTEU in total admission of the students among HEIs of Gomel Region to the following specialization reduced for 6.5 points and it made up 54.9%. The main external factor defined total reduction of first year students' admission is reduction of total student's number in the Republic of Belarus. In the 2012 academic year, the number of school leavers continued to reduce and was 64,480 persons. It is 10,000 persons or 9% less than in 2011 (picture 1). In aggregate all these factors aggravate problem in manning of Belarusian HEIs with student body (especially for full-time education in private HEIs). The most intense competition in Region is in specialization "Economics and Enterprise Management" and "Accounting, Analysis and Audit". 4 of 6 HEIs in Gomel Region offer economics specialities analogous with BTEU. Branches also constitute some potential problems.

In whole, the problem with manning BTEU with a contingent (especially for full-time education) will be worsened due to the tendency of reduction of school leavers (in 2013 the number of potential applicants will reduce to 11% or 7000 persons).



Picture 1 – Quantity of school leavers in Belarus (actual number 2007-2012, predictive number 2013-2015) thousands of persons.

Availability of 22 colleges in the Gomel Region makes it possible for University to increase students' contingent, learning an integrated education programme of HE, and increase financial stability and competitiveness. Specialists training in Belarusian HEIs on the integrated education programme of higher education become more widespread like economically reasonable form. This form ensures inflow of students in the condition of declining demographic situation. It also ensures continuity of vocational secondary education and HE, it makes possible to shorten terms of getting higher education for college leavers.

The competitive advantage of BTEU in comparison with regional competitors is availability of training after integrated education programme of HE, especially for full-time education. BTEU has solid experience in training of specialists with higher education after integrated education programme (since 1990). Tendency of increasing of students, learning integrated education programme of higher education from 35.2% in 2000 to 51.3% in 2013 are tracking in BTEU. This tendency is also typical for other Belarusian universities. Table 2 shows information about BTEU students' contingent in forms of getting education. Increasing of BTEU applicants from among college leavers is also related to existence of 7 colleges of consumer cooperatives system that is parent organization of BTEU.

Table 2 - BTEU students' contingent getting higher education after integrated education system

Types of getting education	2000		2006		2013	
	Quantity	specific weight	Quantity	specific weight	Quantity	specific weight
1. full-time education	2735	100	2213	100	1893	100
Including integrated programme	382	14	590	26,7	369	19,5
2. Correspondence education	6004	100	6600	100	6246	100

Including integrated programme	2694	44,9	3610	54,7	3808	60,9
Total	8739	100	8813	100	8139	100
Including integrated programme	3076	35,2	4200	47,7	4177	51,3

Issues, regulated organizational conditions of getting higher education based on integrated educational system are regulated with Articles 204. 206 of Education Code of the Republic of Belarus №243-3 dated 13/01/2011, Rules of admission to HEIs approved by Decree of the President of the Republic of Belarus №80 (with alterations and additions) dated 07/02/2006, Direction of the Ministry of Education of the Republic of Belarus “On drafting of education and policy documentation of education programmes of higher education” №405 dated 27/05/2013.

However normative and legislative framework of the Republic of Belarus does not fully make it possible to reach integration of education programmes. Newly enacted standards of higher education are oriented to implementation of educational programmes of higher education of the first level, ensuring getting qualification of specialist with HE. For implementation of education programmes of higher education of the 1st level it is efficient to develop appropriate standards of HE. Such practice exists in Russia. Otherwise it’s rather difficult to assure integration of curriculum and shorten the term of training for 1 year. There are also a number of other problems required decisions on the level of the Ministry of Education of the Republic of Belarus.

RATIONALE AND INTENDED RESULTS

Implementation of the educational programme of higher education of the 1st level integrated with educational programmes of vocational secondary education by BTEU:

- Motivate the most capable and college leavers wishing to get higher professional education, make it possible for them to realize their right for education, choice of profession and sphere of labor activity;
- Make it possible to enhance prestige and authority of the educational establishment, increase student’s contingent, increase marketability of graduating students on labor market;
- Give opportunity to bate expenses for specialists’ training through the integrated educational programme of HE, and train specialists with a short time. Assure financial stability of University’s development;
- Encourage lecturers to increase professional level, and adoption of innovative learning technologies;
- Make it possible to improve the system of lifelong professional education system in consumer cooperatives and to upgrade quality of specialists’ training.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

Taking into consideration rising role of integrated education system and the place of HEIs in it, BTEU was acknowledged by Decision of Belcoopsoyuz Board at 29/03/2000 as leading educational institution in system of professional education of consumer cooperatives with entrusting coordination functions and methodical support of educational process “College-HEI” (getting higher education based on integrated education programme). Academic and

Methodical Centre of Cooperative Education was established in BTEU in 2000 (at present Educational and Methodical Department) with the aim of implementation of these functions.

Academic and Methodical Department of the University carries on and coordinated all organizational and methodical work based on integrated education programme of higher education of the 1st level:

- Conclude contracts with establishment of vocational secondary education on lifelong specialists' training;
- Organize the devising of curriculum by University's specializations for implementation of academic programme of higher education integrated with education programmes of vocational secondary education;
- Organize reviewing and expertise of academic and programme documentation and training literature developed for HEIs and establishments of vocational secondary education;
- Conduct meetings of academic and methodical units of university's and colleges' lecturers;
- Participate in organization of professional skills competitions for students of educational establishments of consumer cooperatives;
- Draft local regulatory acts regulated issues of organization and development of methodical support of integrated specialists' training.

In order to implement the integration of education process, organizational and methodological activities, improve teaching and programme documentation of vocational secondary education and higher education of consumer cooperatives, academic unions and Council of academic and methodical units of lecturers of consumer cooperation educational institutions have been set up. The Council of Heads of Educational Institutions of Belarusian consumer cooperatives was established with the aim of implementation of the State policy in the field of education, improving quality of specialist's training, improvement of the educational process at all levels of professional education in the system of consumer cooperatives, development of training, advanced training and researches.

At present there are 8 academic and methodical unions of consumer cooperatives educational institutions for appropriate human resource development based on integrated education programmes of higher education of the 1st level:

- Academic and methodical union of Accounting and Finance lecturers;
- Academic and methodical union of economics disciplines lecturers;
- Academic and methodical union of commercial disciplines lecturers;
- Academic and methodical union of merchandising lecturers;
- Academic and methodical union of informatics and IT;
- Academic and methodical union of law;
- Academic and methodical union of social and humanitarian disciplines;
- Academic and methodical union of technological and technical disciplines.

All academic and methodical unions (except Academic and methodical union of technological and technical disciplines) are headed by heads of relevant departments of the University. It makes possible to achieve integration in the training. The work of academic and

methodical unions is regulated by the Council of academic and methodical unions of consumer cooperatives educational institutions, headed by the rector of the university. In addition, lecturers of consumer cooperatives colleges are the part of the academic and methodical unions in the sphere of vocational secondary education at the national level; university lecturers are the members of the academic and methodical unions in the sphere of higher education.

Unfortunately such work is not carried out with the other colleges in Belarus. In our opinion, it is rational to create such associations based on appropriate profiles of the training all over Belarus. Long experience of interacting University with the institutions of vocational secondary education on the basis of contracts on lifelong training, the list of main and related specialties of vocational secondary education and HE, an individual approach to curriculum development in the sphere of higher education on the basis of vocational secondary education allow to carry on the implementation of integrated education programmes of higher education of the 1st level. At the initial stage of implementation of integrated programmes of higher education is determined by the list of specialties of vocational secondary education, related with specialties in BTEU.

University has developed and constantly updates the list of specialties in institutions of vocational secondary education, corresponding to the profile of the University's specialties that provides opportunity of getting higher education based integrated education programme of higher education to college leavers of relevant specialties. This list was based on national classificatory of the Republic of Belarus "Specialties and qualifications". In addition, BTEU build relationships with institutions of vocational secondary education on the basis of contracts for lifelong training contracts. The forms contracts are also developed by BTEU. The University signed agreements for lifelong specialists' training with 88 institutions of vocational secondary education in Belarus, 5 institutions of vocational secondary education in Russia, 2 Ukrainian HEIs of I-II accreditation.

Sustained effort has been done in the intervening years to improve the structure, content and design of curricula of University's specialties for training of specialists in reduced term of getting HE. It should be noted that the curricula of the University for specialists' training by integrated education programme of higher education has always been developed with due regard to the requirements of educational standards of HE, based on the curriculum of full-time education, as well as on the model curricula, teaching plans and curriculum of vocational secondary education by relevant specialties (areas of specialties, specializations) of vocational secondary education.

The curricula describe academic disciplines studied at the level of vocational secondary education and considered at the level of HE. It provided the possibility of reducing the terms of getting higher education. These requirements for the development of curricula for getting higher education by education programme, integrated with the education programmes of vocational secondary education, provided in the "Procedure of development and approval of curricula for implementation of the content of education programmes of higher education of the 1st level", approved by the Ministry of Education of the Republic of Belarus of 27.05.2013 № 405.

Today, the University accepts applicants have vocational secondary education in the field of

appropriate specialties of the University and with the obligatory existence of a contract of lifelong training between the University and the institution of vocational secondary education.

Term of getting higher education of the 1st level at the University for those who have vocational secondary education in the field relevant to the specialties of the university:

Full-time education is from 3 to 3.5 years;

Correspondence education - 4 years.

Currently implementation of education programmes of higher education and education programme of vocational secondary education is being carried by education profile E “Communication. Law. Economics. Management. Economics and Organization of Production” (within 2 educational areas: “Economics” and “Management”) in accordance with National classificatory of the Republic of Belarus 011-2009 “Specialties and Qualifications”. In total there are 9 specialties, 3 activity-specific, 21 specializations.

There is only one prora that is being implemented in specialty “Audit and Revision”. It assumes getting specialist’s qualification with HE, and it is integrated with the education programmes of vocational secondary education by correspondence education. University lecturers drafted curricula in various academic disciplines, integrated curricula including curricula of vocational secondary education. The University is doing a great job on the preparation of textbooks for institution of vocational secondary education within improvement of the education programmes of vocational secondary education and updating of scientific and methodological support of education programmes.

Table 3 – Published study materials for students of institutions of vocational secondary education

Kind of publication	Title of publication	Department of the University
Textbook	Merchandising of Nonfoods	Merchandising of Nonfoods
Tutorial	Basis of Marketing	Marketing
Tutorial	Supplier and Sales Activity	Marketing
Tutorial	Basis of Management	Management
Tutorial	Technology of informational supply of Business	Data-Computing Network
Tutorial	Basis of Intellectual Property	Commerce and Trade Technology
Tutorial	Foreign-Economic Activity	World and National Economics
Practicum	Judicial System	Law
Manual	Judicial System	Law
Manual	Basis of Technical Measurement and Standardization	Merchandising of Nonfoods
Manual	Merchandising	Merchandising of Nonfoods
Manual	Basis of Statistic of Information Processing	Data-Computing Network
Manual	Modern Computer Office Technology	Data-Computing Network

RESOURCES REQUIRED AND USED

A special unit to coordinate and control training – Academic and Methodical Department – was established in BTEU in order to implement integrated education programmes of higher education at the university. Activities of the staff of the Department:

- organization of curriculum development in the specialties (activity-specific, specializations) in the integrated training;
- study, summarize and promote the best teaching practices and the introduction of new educational technologies and learning tools in the educational process;
- organized and participated in the educational and methodical association of colleges;
- prepared regulations, guidelines and other guidance documents and regulatory materials that govern the implementation of integrated education programmes of higher education at the university.

The Academic and Methodical Union of lecturers of consumer cooperation educational institutions, and the Council of academic and methodical union were established. There are 8 teaching unions of consumer cooperative educational institutions of the corresponding profiles of integrated educational programmes in higher education of the 1st level. University lecturers drafted curricula in various academic disciplines by integrated curricula with due regard to curriculum of vocational secondary education.

FACILITATING FACTORS

The system of consumer cooperatives of the Republic of Belarus has 7 departmental colleges. Graduates of these colleges are potential applicants of BTEU. The University developed a number of regulatory, educational and policy documents on the organization of an integrated training. They have found use in the regulations of other universities and in the Ministry of Education. The University has developed a form of contract on lifelong training, carried out on the basis of the relationship with the institutions of vocational secondary education.

The list of specialties of vocational secondary education, corresponding to the profile of the University's specialties and assumes opportunity to get higher education by specialties of the University in reduced term For college-graduates of related specialties and Curricula for the university's specialties are based on vocational secondary education and drafted with due regard to the model curricula, and curricula of institutions of vocational secondary education specifying academic disciplines studied at the level of vocational secondary education, and accounted for at the level of HE. Reduction of terms of education is possible upon condition of observance requirements of education standards and model curricula.

CHALLENGES AND OBSTACLES

Over the years, there was no legal regulatory framework at the level of the Ministry of Education of the Republic of Belarus to implement the education programmes of higher education integrated with the educational programmes of vocational secondary education. Currently the Ministry of Education is drafting a legal and regulatory training and methodological support of the education programmes of higher education integrated with the education programmes of vocational secondary education. But these documents do not fully regulate the integration of vocational and higher education. There are differences in the organization of the education process of vocational and higher education: in the formation

and content of the curriculum (the ratio of classroom and extracurricular work, the structure and content of academic disciplines of state component).

Features of drafting of educational and programme documentation of the education programmes of higher education (1st level) integrated with the education programmes of vocational secondary education are not defined in the educational standards. It is necessary to take the amount of knowledge acquired in vocational secondary education into account when determine the content of the disciplines.

The legal and regulatory framework of the Republic of Belarus does not fully achieve the integration of education programmes. The newly introduced new standards for higher education are focused on the implementation of programmes of higher education of the 1st level, providing getting qualification of a specialist with higher education. It is viable to draft appropriate standards of higher education for implementation of education programmes of higher education of the 1st level, providing getting qualification of a specialist with HE, and integrated with the educational programmes of vocational secondary education.

Such practice is used in Russian. Otherwise it is quite difficult to ensure the integration of curricula and to ensure reduction of the term of training for 1 year. Only college leavers can enter the University and only in an approved list of specialties. The education programme of vocational secondary education should be rigorously analyzed for including to the list of specialties. However, in order to increase the potential number of university entrants, such an analysis is not always made. It is viable to approve a list legislatively at the level of the Republic of Belarus, and to develop standards of higher education in integrated educational programmes on this basis.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Over the years, there was no legal regulatory framework at the level of the Ministry of Education of the Republic of Belarus to implement the education programmes of higher education integrated with the educational programmes of vocational secondary education. It caused difficulties when drafting academic and methodical documentation, and when concluding contracts with vocational secondary education of lifelong specialists' training. The continuity and succession of professional education is necessary condition for the development of an innovative society. The continuity of education system has innovative character as it promotes integration of different levels and stages of education, provides joining of educational institutions of different levels of education.

Currently, 10 Belarusian Universities has departmental colleges. It promotes wider development of integration of higher and vocational education, assures full succession of education programmes, and coordination of curricula.

SUSTAINABILITY OF THE GOOD PRACTICE

The University continues working on conclusion agreements with vocational secondary education. Currently the University signed agreements for lifelong specialists' training with 88 institutions of vocational secondary education in Belarus, 5 institutions of vocational secondary education in Russia, 2 Ukrainian HEIs of I-II accreditation. Tendency of increasing the number of students studying education programme of higher education integrated with

education programme of vocational secondary education, is traced as a result of organized vocational guidance from 35.2% in 2000 to 51.3% in 2013.

TRANSFERABILITY OF THE GOOD PRACTICE

The University drafted a number of regulatory, educational and policy documents on the organization of an integrated training. They have found use in the regulations of other universities and in the Ministry of Education: forms of contract of lifelong training, model of curricula. Experience of specialists' training by integrated programme and drafting of local regulatory acts, educational and policy documents get appreciation of leading educational institution "Belarusian State Economics University" and is used by others:

- forms of contract of lifelong training upon which relationship of the University with the institutions of secondary special education is based;
- the list of specialties in institutions of vocational secondary education, corresponding to the profile of the University's specialties, that provides the opportunity of getting an higher education based integrated education programme of higher education to college leavers of relevant specialties;
- Individual approach to curricula drafting for 1st level of higher education based on foundation of vocational secondary education.

The University's approach to curricula drafting for 1st level of higher education based on the foundation of vocational secondary education approved by State Educational Institution "Republican Institution of Higher School". These curricula were drafted with due regard to model curricula of higher education and vocational secondary education with an indication of academic disciplines studied at the level of vocational secondary education and recorded at the level of HE. These requirements for drafting of curricula for getting higher education through an education programme integrated with the educational programmes of vocational secondary education are stipulated in the Procedure of drafting approval of curricula for implementation of the content of the education programmes of 1st level of HE, approved by the Ministry of Education of the Republic of Belarus of 27.05.2013 № 405.

LESSONS LEARNT AND RECOMMENDATIONS

Formation of highly qualified specialists' knowledge at 1st level of higher education learning by the integrated programme is based on the level of knowledge that was received at the level of vocational secondary education. It is based on the foundation of the analysis of curricula and syllabus of vocational secondary education. Thereby, reduction of terms of getting higher education at the 1st level through the integrated programme is carried on with due regard to the level of training of specialists with vocational secondary education in relevant education and specific areas of knowledge, and increasing students' unsupervised work. It is also based on the assumption of compliance with the requirements of higher education education standards.

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5. Students Activities to Encourage School-Leavers to Enter Belarusian State Economic University

Belarusian State Economic University, Belarus

EXECUTIVE SUMMARY

One of the most important factors of successful functioning of an educational institution is quantity and quality of prospective students the university is able to attract and enroll. This factor directly depends on the demographic situation in the country. At the moment the prospective students are those who were born in 1994-1996. These years were the years of Perestroika. The numbers of the demographic situation affect greatly the enrollment process in institutions of higher education. Possible insufficient quantity of students in the institution (if not enough students are attracted to enter this particular university) influences all levels of the university. Thus the key problem we would like to address in this case study is a demographic issue (low birthrates) which leads to intense competition among universities. This challenge makes development of new tools and methods of attracting prospective students vital for the whole existence of the institution.

The activities described in this case study are aimed at engaging prospective students. One more practice we decided to introduce is to support the initiative of our current students to recruit new students. In general, we can outline three directions we have worked in to resolve the problem of enrolment decrease. These are:

- giving events on so called professional orientation;
- improving the educational process and curriculum;
- admitting students from other countries (international students).

BACKGROUND INFORMATION

The Belarus State Economic University (BSEU) was founded 80 years ago in 1933. This is one of the largest universities in the country. The Belarus State Economic University is a complex educational establishment, which trains specialists in the field of economics and management, finance and banking, accounting and statistics, commerce, international economic relations, economic policies, business communications techniques, languages, marketing, logistics, economic law, economics and management of tourism, economics of labor and nature use, advertising activities, and price formations. BSEU has a well-developed infrastructure of a training and scholarly complex: 11 schools, 59 departments (of which 39 are graduating ones), the Institute of Social-Liberal Education, the Institute of Raising Qualification and Retraining Economic Cadres, the Bobruisk branch, six centres (those of scholarly research, macroeconomic research, management issues and consulting services, merchandising research and expert examination, IT development and a publishing one), a library, research labs, divisions and services, a student campus, a sports complex and a trade complex.

The total number of students (both full-time and part-time) amounts to 27,000. Among them are international students from 23 countries. The students are trained in 20 majors

and 48 specializations. There are over 1,300 faculty members. Almost half of them hold advanced degrees and scholarly titles, including 100 doctors habile (Dr. hab.) and full professors and 610 with a Ph.D. degree.

The University's international activities are aimed at developing relations with the leading universities of the CIS countries, France, Germany, Italy, and China. For over 113 years now, BSEU has been closely cooperating with the University Paris-1 Pantheon-Sorbonne in France. At present, the BSEU has bilateral agreements with 64 universities and research institutions from 16 countries. BSEU cooperates with foreign universities under bilateral agreements, participates in international projects (TEMPUS-TACIS, DAAD) and operates within intergovernmental and inter-University agreements on educational exchanges (Agreements on Educational Exchanges between the Ministry of Education of the Republic of Belarus and the Educational Ministries of the PR of China and Vietnam, Memorandum on Student Exchanges between BSEU and TSE, Finland). BSEU students are regularly awarded DAAD grants to study at German universities.

Creative contacts with national and overseas universities help enrich the process of teaching with practical information and provide a wide exchange of experience, as well as conduct research on relevant issues of economic development and identify the most promising trends of training specialists based on the needs of the national economy and domestic labor market.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Demographic problems leading to enrolment decrease

THE WIDER CONTEXT

One of the most important factors of successful functioning of an educational institution is quantity and quality of prospective students the university is able to attract and enroll. This factor directly depends on the demographic situation in the country. The lower the birthrate the fewer prospective students there are. It means harder competition between the universities and the necessity of serious attempts to attract new students. At the moment, prospective students are those who were born in 1994 – 1996. These years were the years of Perestroika (the literal translation of this term is “restructuring”, changing the Soviet economic and political systems). Perestroika is considered to be a very hard time for practically all Post-soviet countries, and Belarus is not an exception.

At that time the economies of the countries were totally reconstructed. Instead of Soviet command social economy, new liberal capitalist economical practices were introduced, with the privatizations of social services, means of production, etc. The general standard of living fell dramatically and unemployment rose drastically. All the symbolic capitals of citizens, such as education, job experience, etc. were totally depreciated. The table below shows the dynamics of unemployment rates from 1996 till 2012 in the Republic of Belarus. As we see, unemployment rates in 1996 – 2003 were extremely high (131 000-136 000 of unemployed people)

Year	Quantity of unemployed people	The registered unemployment rate (as a percentage of the economically active population)
1996	131000	2.9
2000	96 000	2.1
2001	103 000	2.3
2002	131 000	2.9
2003	136 000	3.1
2004	83 000	1.9
2005	68 000	1.5
2006	52 000	1.1
2007	44 000	1
2008	37 000	0.8
2009	40 000	0.9
2010	33 000	0.7
2011	28 000	0.6
2012	25 000	0.5

If we try to measure the living standard in the Republic of Belarus, we can see the statistics of purchasing power of the average income in the country. Below is a table with the information on how many kilos of particular products it was possible to buy spending the whole sum of average salary.

	Pork	Poultry meat	Fish	Milk	Cheese	Sunflower oil	Bread	Rice	Potatoes
1995	18,3	23,1	20,8	219,9	12,8	25,1	136,6	59,3	194
2000	27	31,6	26,2	295,2	21,4	45,1	150,2	86,7	351,8
2001	33,5	40,5	34,5	311,6	25,2	67,4	189,5	148,4	500,3
2002	37,2	40,8	38,3	285,4	24,6	58,6	237,2	158,3	306,1
2003	45,8	46,1	43,1	308,8	25,9	57,4	256,2	156	334,9
2004	44,9	50,1	50,9	320,1	28,5	70,7	230,4	156,9	676,4
2005	45,6	58,3	66,7	381,2	33,8	89	260,2	164,2	625,2
2006	53,8	67,2	81,3	445,2	40,3	110,8	297,4	186,4	504,8
2007	64,3	79,6	85,1	503	48	125,6	351,5	229,9	664,3
2008	70,6	84,4	98,2	505,6	47,4	102,7	383,6	182,2	755,3
2009	71,6	87	107,1	499,1	48,8	151,7	386,7	154,5	747,9
2010	81,4	100,6	126,5	562,7	53,9	176,7	438,7	199,7	654,1
2011	67,6	83,2	89,5	614,8	48,7	102,5	488,6	154	633,4
2012	65,4	90,3	108,3	503	47,5	148	496,3	225,5	1 346,2

Citizens had to find new ways to earn money and to survive. Various studies show that any economic crisis is directly linked to the drop of birthrates in different countries at different times. Obviously, when people have nothing to eat, the last thing they want to do is to give life to new human beings.

Below is a table illustrating birthrates in the Republic of Belarus in 1991 – 2004.

Year	Quantity of newborns
1991	132 045
1992	127 971
1993	117 384
1994	110 599
1995	101 144
1996	95 798
1997	89 586
1998	92 645
1999	92 975
2000	93 691
2001	91 720
2002	88 743
2003	88 377
2004	88 943

In 1991 there were 132,045 new people born. By 1994 this amount has become only 110 599, almost 215 000 less. And by 1996 the quantity had fallen to 95,798, which is 36 247 less than it was in 1991. These numbers of the demographic situation affect greatly the enrollment process in institutions of higher education. As it was said at the very beginning, the lower the birthrate the less prospective students there are and the harder the competition between the universities.

RATIONALE AND INTENDED RESULTS

Possible insufficient quantity of students in the institution (in case if not enough students are attracted to enter this particular university) influences all levels of the university. In the worst case, the university can be even closed. From 1995 to 2013 the quantity of higher education institutions decreased from 59 to 54. Universities exist for young people to become young qualified professionals in particular fields. If there are not enough young people to be taught, than the whole university system suffers. The academic staff can be left jobless and even mass dismissals can follow. The whole image of the university can fall, and that can theoretically lead to a particular devaluation in the labor market of the education this university provides.

Thus the key problem we would like to address in this case study is a demographic issue (low birthrates) which leads to intense competition among universities. This challenge makes development of new tools and methods of attracting prospective students vital for the whole existence of the institution. In our department, a big number of various events to attract prospective students is organized. We hold open days, when future students and their parents can freely attend the University and learn everything they are interested in. Our leading professional specialists come to schools and tell prospective students and their parents about the department, specialization, stuff and perspectives. We send invitation letters to the distinguished high school students (for example, winners of academic competition between high school students) to visit open days of our department, etc.

These events are quite useful; they give people the precise information about the specialty

and profession, its advantages and perspectives. We are always very frank with future students and their parents about the statistics of employment of our graduates, which is decent enough to be a tool of attraction. In addition to mentioned ways of attracting new students, we decided to introduce one more practice, which is described in this case study as a good practice. The idea is to support the initiative of our current students to recruit new students. This practice has a number of advantages and is able to bring new interesting perspectives, which are not typical for the more common events of University PR described above. The planned result of introduction the good practice is to attract more new and appropriate students. It is always good to have self-motivated students, and the more information prospective students get from different media, the higher the opportunity that they will make their decision consciously.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

According to the Belarusian legislation, any citizen aged from 14 to 31 is considered young. Young people account for over one-fourth of the Belarusian population, or 2.6 million. It is obvious that the youth is the major pillar of our society. But we have hardly used its powerful potential yet. We often "brush aside" youth's initiatives. Many managers avoid direct contact with the youth, they are afraid of acute questions. They are incapable of involving young people into useful public activities. We should work in this direction. It will help avoid a number of negative phenomena in the youth environment.

Young people represent a social and demographic group that is characterized by certain psychological, age-specific and social peculiarities. The period of youth usually consists of such important steps as getting secondary, professional or higher education, beginning one's professional activity, getting married, giving birth to children. Regardless of the intensity of youth subcultures in the society, young people are a country's strategic resource, on the mobilization of which its vitality depends. The following factors explain the role and importance of the youth in Belarus:

- young people make a large social and demographic group and constitute a significant part of able-bodied population;
- young people are the main bearers of intellectual and physical potential of the society;
- young people represent the most flexible and promising social group.

A considerable part of young people in Belarus is represented by students. Taking into consideration the number of applicants and the number of vacancies available at higher educational establishments, one can easily state that this year some universities of the country will obviously face the problem of insufficient quantity of students. For example, such specialties as "Mathematics and Information Technology", "Physics and Information Technology" and some others have turned to be the most unpopular among school-leavers at the Belarus State Pedagogical University named after M. Tank and the Brest State University named after A. Pushkin.

As for the schools of the Economic University, they will surely take the planned number of students and fill the vacancies on most specialties. The problem is that since 2010, fewer and fewer school-leavers have applied to the University. The entry rate has become lower as a result. It means that almost everyone who wants to become a student enters the

University. Consequently, the aim to take “the best of the best”, which is pursued by most educational establishments, is difficult to achieve. One of the most popular specialties at BSEU is “Linguistic provision of intercultural communications” (specialization “Communication technologies in business”). It affords training specialists with excellent knowledge of foreign languages as well as fundamentals of economics. Additionally, the graduates of the School of International Business Communications (School of Language Studies until 2007) master all modern communication technologies in different fields and are able to put them into practice.

The School was established in 2002 on the basis of several Foreign Languages Departments and the Department of the Belarusian and Russian languages of the Belarus State Economic University. The first intake of students happened in 2003. Admission to the School is on a competitive basis for any form of payment. In 2004 there were 25 applicants for one vacancy at the School of IBC, and that rate was the highest among the educational establishments of the republic. After passing state examinations and defending the diploma thesis, a graduate is awarded a state diploma with major in Linguistic provision of intercultural communication (specialization Communication technologies in business) and qualification Specialist on Intercultural Communication, Translator Consultant (with two foreign languages indicated). In 2008 the School of International Business Communications of the BSEU granted diplomas to its first graduates. More than 50% of the graduates are engaged in the field of economy.

The School manages language courses that provide a possibility of learning both widely spread European and languages that are in demand though not well represented in the educational market, like Portuguese, Czech, Chinese, Arabic and Japanese. In addition, the courses offer preparation for taking exams for DSH, DELF and DALF certificates. Every year the School participates in the National Students' Scientific and Practical Conference “The State Economy of the Republic of Belarus: Problems and Development Prospects”. Within the conference a foreign language section “The World in the XXI century: economic, political and socio cultural aspects” is organized.

The School invites for teaching experienced professors and lecturers from higher educational institutions from Germany, Turkey, the USA, France, China, and other countries. It maintains active contacts with Russian educational establishments: St.-Petersburg State University for Economics and Finance and Moscow State University. Students are trained both at the state budget expense and on a fee-paying basis. Previously, the number of children who entered the School each year amounted to 75 (15 students were trained at the state budget expense and 60 on a fee-paying basis). This year the School plans to take 30 students who will be trained at the state budget expense and 45 students who will be trained on a fee-paying basis. It is caused by the prerequisite that during the last three years the School has faced the difficulties with admission of paying students.

In order to apply to the School one must take exams in English (or another foreign language), the Russian or Belarusian language and the History of Belarus. The exams are held in the form of centralized testing. The points (test results) are summarized and the average grade of a certificate of secondary education is added. Winners of Republican academic contests are admitted without taking exams; winners of regional academic contests do not

take an exam in a foreign language. Therefore, a few vacancies were left for those who had to take all exams. The competition rate was very high as a result of the sum of points applicants got (320-340 points in 2011). At the same time, those who applied to fee-paid vacancies had much fewer points. Moreover, there appeared a problem of lower competition rate among such applicants owing to the demographic issue (low birth rates in 1994-1997). That created a gap between the two groups of students and made it much harder for teachers and professors to work with them. Thus, the students of the School together with its management took the initiative to address their request for creating more state-financed vacancies to the Ministry of Education of Belarus. The request was accepted and the number of vacancies financed from the state budget has been increased to 30. The number of fee-paid vacancies has been changed and amounts to 55 now.

In general, we can outline three directions we have worked in to resolve the problem of enrolment decrease. They are:

- giving events on so called professional orientation;
- improving the educational process and curriculum;
- admitting students from other countries (international students).

Professional orientation aims to support and help school-leavers in regard to education guidance, give advice and consultancy. It includes a number of events. Among them we could mention such activities as holding open days, visiting schools, holding meetings with the winners of academic competitions, making excursions for freshmen.

The first open day for high school students and their parents was held in 2008. Since that time we regularly invite prospective students and their parents to the University and our School in particular. Open days are held twice a year (in autumn and in spring). In the beginning they were organized only by the Dean and the heads of the departments that provide training for the School. They told our guests everything that was of interest to them. But to increase the effectiveness of this event and to engage more high school students we decided to introduce the practice of attracting the students of the School of IBC to open days. Our current students share their impressions of studying at our University and the School, answer questions, show creative footage and short films about the University and students' working life. One of such films, or as we call it an advertisement of the School of International Business Communications can be found at <http://www.youtube.com/watch?v=zhCXI5kdGVE>.

One of the most important points in attracting high school students is visiting schools. Until recently our teachers and professors did it themselves. But since 2010 our current students have been involved in the activity equally with our professional and teaching staff. The activity our current students implement is going to schools and talking to current high school students. They speak about the specialty, the department, about in general how it feels to study in our University and in our School. The most precious thing in this practice is that our students are able to give prospective student the view from the inside. Thanks to a small age difference the school students tend to trust current University students more than visiting professors. Our students can find the more appropriate language to speak to high school students and more interesting points to attract their attention. In order to persuade prospective students to enter the BSEU our students give them small calendars and brochures containing the general information about our School, the staff, admission requirement, contact details, etc.

It should be mentioned that the initiative to visit schools and tell high school students about our University and the School is often taken by our graduates. They share their experience with their relatives, friends and those who study at the school our graduates studied at. Until 2012 we admitted only those applicants who studied English as a foreign language. A valuable suggestion made by our current students on the basis of numerous requests of high school students was to allow the latter apply to the School in case their first foreign language is not English. The suggestion was approved both by the administration of the University and the Ministry of Education. Since 2012 we have taken applicants who studied French, German, and Spanish etc. as a foreign language at school. If they enter the University, they study English from the very beginning as the second foreign language.

Each year, academic competitions in various subjects are held among high school students at regional and republican levels. As we are interested in attracting the winners of the abovementioned competitions we try to cooperate with them. Our current students organize meetings with the most diligent and distinguished high school students, hold quiz games with them, show them round the University. We have every reason to say that it works out. In 2003 only one winner of an academic competition applied to our School, in 2005 – 3 of them, in 2012 – 7, in 2013 – 14.

The students of the School help first-year students to adapt to their new way of life. Each year at the end of August they organize so called excursions round the University. They familiarize freshmen with the facilities provided on its territory, buildings and rooms, the timetable; give advice about arrangement in a hostel. Implementation of the abovementioned activities has contributed to achievement of the following objectives:

- directing a person towards a specialty according to their preferences and abilities;
- providing proper information regarding requirements and opportunities related to a defined choice;
- advertising the University and the School of International Business Communications in particular;
- attracting high school students to BSEU;
- giving our current students an opportunity to realize their learning and leisure potentials by developing their self awareness and decision making capacity.

Another significant point in solving the enrolment problem is improving the educational process and curriculum on the initiative of the students of the School. In 2006 our students carried out research in the form of a questionnaire poll and interview among representatives of Belarusian enterprises, joint ventures and foreign businesses registered and running their activity in Belarus. The questionnaire contained such questions as “What faculties (schools) of the BSEU do you consider the most prestigious?”, “Graduates of what schools do you take on in the first turn?”, “What associations do you have with the name of our School (School of Language Studies)?”.

The findings turned to be rather upsetting. Most managers of different levels associated our School with nothing more than language courses, and were reluctant to hire our graduates. They explained it by the fact that knowing foreign languages is insufficient to work for companies operating in the spheres of trade, logistics, banking, insurance and others. Employers rarely look at the list of subjects learnt by graduates. They often value a person’s

abilities and knowledge by the name of the university and the faculty a prospective employee graduated from. The former name of the School implied that we trained translators, and the demand for such specialists was not high at the labour market. The process of globalization, interconnection of economies and increasing ties in all spheres of life between countries gave rise to new manpower requirements. The need for specialists in the sphere of intercultural communication appeared. We train specialists who have a good command of languages, as well as get knowledge of fundamentals of economics, external economic relations, international management, communication technologies.

Thus, it was decided to give the School a new name. Our students put forward numerous variants, and “School of International Business Communications” was chosen as a final version. The School was officially renamed in 2007. The opinion poll carried out during holding events on professional orientation shows that the new name appears to be much more attractive to high school students. Most of them say they would prefer to study at the School of International Business Communications than at the School of Language Studies.

Our current students take the lead in changing and improving the curriculum. They submit proposed curriculum changes based on the research findings or statistics to the dean for consideration. This submission includes and is supported by the actual recommendations for new courses, textbooks or programs. As the documents must be endorsed by the administration of the University and the Ministry of Education, we should explain in detail the rationale for the curriculum change. The Dean of the School together with the heads of the departments that provide training for the faculty, as well as professional and teaching staff must determine how the changes will affect the academic performance of students, compare and contrast the current curriculum with the advantages of the proposed new curriculum.

We have changed the period of introductory, translation and pre-graduate practical training on the proposal of our students whenever they provided an explanation and sufficient evidence of its necessity. We have also made several changes in relation to the order of subjects. For example, such subject as “International economic relations” was studied during the third year (5th term). At the same time a course in “Business English” was taught to second-year students. Our students found it difficult to learn new vocabulary without knowing and understanding economic notions in Russian. So they made a proposal to have lectures in “International economic relations” in the 4th term (second year of studies).

Admission of international students is another way of solving the problem of insufficient number of students at the University. At present the BSEU provides training for students from 23 countries of the world. Students represent such countries as Turkmenistan, PRC, Turkey, Iraq, Israel, Ukraine, Latvia, Azerbaijan, Georgia, Libya, Syria, Lithuania, Vietnam, Kazakhstan, Armenia, Angola, and Poland. Students from Turkmenistan make up 45.5% of all international students. Representatives of PRC comprise 34%. Students from Turkey make up 7% of all international students.

The School of IBC has been admitting international students since 2007. The process of their adaptation to accommodation and educational process in a receiving country is very long and complex. The process of sociocultural adaptation consists of the three stages, namely

preliminary stage, initial stage, main stage. In the first stage, foreign citizens get acquainted with the University via its representatives. Assimilation of a new culture is the easier, the more substantial the information obtained in the first stage is. Here the key role belongs to a website of the University, which is regularly updated. The second stage lasts for one month. The third stage spreads over the whole stay in a country.

International students begin their stay in a host country with submission of all necessary documents to an International Relations Division and the Dean's Office for International Students. The term of studies at the University depends upon the school, major, mode of studies (full-time or part-time) selected by international students and varies between 4 and 5 years. The school and major are selected when international students submit papers to the University. In this stage much depends on professional competence of the staff, friendliness and personal interest of teachers and professors. They help to relieve stress during an interview which is a form of selection of applicants.

Meanwhile, in the initial stage international students enter new sociocultural, language and academic environment, overcome physiological and psychological barriers, and adopt basic norms of behavior in an international society. A great support in adapting to new study and living conditions is offered by the Dean's Office for International Students, the Pre-University department, the Department of Belarusian and Russian Languages, members of countrymen associations, Belarusian students. The Dean's Office is engaged in coordination of educational process for international undergraduate students at the BSEU and assistance in improving living and leisure conditions for international students. The Pre-University department is aimed for foreign citizens who intend to continue studies at the BSEU as undergraduate, master, or doctoral students. One of the main activities held by the Department is organization of Russian language courses for foreign citizens.

The Department of Belarusian and Russian Languages provides supervising teachers and professors to assist international students in adapting to new living conditions. These people help international students to make their life and leisure interesting and diverse, introduce the internal regulations of the hostels, organize cultural and sports events, and engage international students into the social life of the University. They also offer international students excursions to historic places in Belarus, visiting Minsk theatres and museums. Formation of academic groups is one of the most important stages of the process of adaptation of international students. As a rule, they study together with their Belarusian counterparts, which can smooth over the effect of cultural shock. This also contributes to successful communication. Moreover, most international students face difficulties with learning the Russian language, which creates obstacles in the educational process. A student can withdraw into oneself, miss classes and fall behind the group as a result. Forming multinational groups facilitates immersion of international students in the language environment, faster enrichment of their vocabulary. The necessity to communicate with hostel neighbors also speeds up the process of learning Russian.

It should be noted that our Belarusian students participate both in attracting international students to our School, and assisting them to adapt to our culture. Students of the School of IBC hold so called advertising campaigns for pre-University students. The materials (posters, charts, pictures) are prepared specially for foreigners. In 2012 the idea to create a Club of

International Friendship at the University appeared. A Club of International Friendship is an organized structure within the University that aims at establishing direct contacts among students as well as exchange of delegations (holding festivals of international friendship, student conferences and round tables, etc.). The main objectives of the Club are:

- development of feeling of respect for all peoples and nations;
- strengthening of relations between students from Belarus and other countries;
- broadening of students' outlook as well as acquisition of communication skills;
- promotion of ideas of peacefulness of nations.

Each year a festival "To mutual understanding through languages and cultures" is held at the University at the end of May. The festival brings together foreign students and students of the BSEU from Belarus, which facilitates friendship and tolerance. The number of students entering our University is increasing each year. The conditions created at the University and the School of IBC in particular by professors, teachers, the staff and our students for foreign students make the latter choose the Republic of Belarus as a country where they can get higher education.

RESOURCES REQUIRED AND USED

Implementation of any activity becomes possible on the condition that the required resources are available. The first group of resources that we have used to solve the problem of insufficient quantity of students is human resources. The following bodies and divisions have contributed to holding events on professional orientation, improvement of educational process and curriculum, attracting students from other countries:

- the Ministry of Education of the Republic of Belarus;
- administration of the BSEU;
- Dean's Office of the School of International Business Communications;
- Departments that provide training for the School of IBC (the Department of Intercultural Economic Communication, the Business English Department, the Theory and Practice of English Speech Department, the English Speech for Professional Purposes Department, the Romanic Languages Department, the Department of Belarusian and Russian Languages, Department of World Economy, Department of International Business);
- International Relations Division of the BSEU;
- Dean's Office for International Students;
- Practice Division of the BSEU;
- administration of the schools that have been visited by out professors, teachers and students;
- Student Council of the School of IBC.

Among the people who have participated in the activities aimed at solving the problem of enrolment are Natalia V. Popok, the Dean of the School of IBC, Heads of the Departments that provide training for the School of IBC, professional and teaching staff, students and graduates of the School of IBC, representatives of firms and enterprises who took part in the polls and interviews.

The activities and events have been financed by the state budget and the University. The third group of resources includes supporting materials (brochures, calendars, posters, charts,

footages) that are used for dissemination of information about the BSEU and the School of International Business Communications.

FACILITATING FACTORS

Implementation of the activities described in the previous sections has been facilitated by several factors. Administrators of the schools where our teachers and students hold events on professional orientation create conditions for meetings with eleventh formers, do not impede them or regard the activity as intrusion. Another important facilitating factor is connected with admission of international students. While applying to the University they are to submit a set of documents (references, health and other certificates). The documents must be drawn in compliance with the requirements established by the Ministry of Education and the University. Such requirements are sometimes difficult to follow for foreign citizens. Long distance between our Republic and other countries makes it almost impossible to consult the staff of the International Relations Division and the Dean's Office for International Students in person. Moreover, most foreign citizens do not speak Russian. We try to ease documents circulation and render all necessary assistance in drawing the documents. And the administration of the University supports our initiatives regarding this point.

The fact that students of the School are not afraid of showing initiative and being active on the fronts connected both with the educational process and extra-curricular activities has also contributed to successful introduction of the good practice. At present our students make up one fourth of all members of the Council of The School and are rightful participants of the decision making process. Graduates of the School of IBC do not refuse to take part in open days that are held at the University. They value the knowledge and experience they gain at the School, which helps them to get interesting and well-paid jobs. They actively engage their relatives and friends to the School.

As we have already mentioned, our School was renamed in 2007. The idea was suggested by our students. They interviewed a number of people thanks to whom certain conclusions were drawn. They didn't refuse to answer our questions and made several proposals.

CHALLENGES AND OBSTACLES

Any undertaking faces both minor and serious obstacles on its way to being implemented. Our practice is not an exception. From the moment our School was established, it encountered a lot of suspicious attitudes on the part of students, professors and teachers from other educational establishments and our University as well. The specialty we provide at our School is different from those provided by other Schools of the BSEU. Thus, it took some time to prove that our students are rightful participants of the University social, scientific, sports, and cultural life. The situation changed a lot after renaming the School.

If to take the activities regarding improvement of educational process and curriculum, it should be noted that the process of changing curriculum is both labour- and time-consuming. Wishes of students can serve only as a ground for introducing changes. But very often it is not enough. We must:

- provide forecast results that students should receive from the new curriculum;
- compare and contrast the current curriculum with the advantages of the proposed

new curriculum;

- provide an assessment of the monetary costs associated with fully funding the new curriculum, determine the costs of textbooks, supporting materials, teacher training and additional staffing.

If the program is not successful, we must be prepared to provide an explanation of why and how to address the shortcomings of the curriculum changes.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

The practice of engaging our current students in the process of recruitment of new students has not been introduced by any other School of the BSEU yet. Each School holds events on professional orientation, but it is done by professional and teaching staff, heads of departments and deans. Students of other Schools of the BSEU do not participate in open days and do not visit schools together with their teachers.

Another important point is connected with the notion of leadership. Nowadays, students need to recognize the importance of leadership in ways that older generations did not. Today's students are graduating into a world that is much riskier than it was even a few decades ago. We are beginning to recognize all threats and challenges that are constantly arising. Graduates will face numerous obstacles on the way to achieving their goals. They will need to be equipped to make their own opportunities. They need the skills, knowledge, and qualities like self-reliance, creativity, conflict-resolution and teambuilding skills, ethics, understanding of economics, and more.

Exercising leadership effectively means using appropriate skills to meet the specific needs of one's group. Most students learn leadership skills during their classes (subjects "Communicative Strategies in Business", "Interpretation of Communicative Behavior in Business", "Intercultural Communication"). They get involved in group assignments, group projects, and discussions. Often, the importance of such work is not clear to them. We usually begin group activities with a discussion of the importance of leadership skills and how it will benefit in their future jobs. Students need to see participation in student organizations during their university years not as something extracurricular but as something essential for their future life.

Moreover, we can encourage leadership that seeks to have a positive impact in our nation amongst our youth by involving them in extracurricular activities that are of great importance for the School and the University, which will help to solve acute social problems. Leadership is a skill so we need to teach it to our students, only then can we produce leaders who will have a potential to bring about a change in our community, country and globally. In reality, that is explained by the fact that the future of any nation belongs to young people.

SUSTAINABILITY OF THE GOOD PRACTICE

The good practice of supporting the initiative of our current students to engage new students has been implemented for several years. Sustainability of the good practice at our University is guaranteed by several factors. Firstly, we created a special sector on professional orientation within the student council of the School of IBC. Student council is a curricular or extracurricular activity for students within a School at the University. Such

councils function as student government bodies. The student council of our School helps share students' ideas, interests, and concerns with teachers and professors. They often organize university-wide activities, including social events, community projects and curriculum reforms.

The student council is a representative structure for students, through which they can become involved in the affairs of the university, working in partnership with the School management, staff and parents for the benefit of the School and its students. The student council of our School includes a president, a vice president, and other members and consists of the following sectors:

- a sector on controlling living conditions of the students;
- a sector on organizing and holding social and cultural events;
- a sector on supervising learning activity;
- a sector on professional orientation.

The fourth sector has been formed within the council recently. Its main aim is to ensure the activities on attracting new students are held regularly, with responsibility, and supervised by our distinguished students. Moreover, a student of any academic group can pass on their requests and ideas to the members of the student council. At present the members of the sector are making a plan of events to be held during the following academic year. The events themselves and the forms of presenting the information about our School are being changed year in year out. It should be stressed that the initiative to undertake the activities described in the case study often comes from our students themselves. In order to sustain social activity of our students we encourage them by providing benefits when applying for a hostel or a discount on the fee they pay for training. Secondly, the initiatives to introduce changes to the curriculum are always endorsed when sufficient proof of the necessity to do it is provided.

TRANSFERABILITY OF THE GOOD PRACTICE

In case any other educational establishment is willing to transfer the practice of involving current students to recruit new students, we recommend you to consider the three points mentioned below.

1. The problem of insufficient quantity of students is a burning problem for many educational establishments both in our country and abroad. The first step to resolving it is to identify who to fill the vacancies with. In our case these are high school students, winners of academic competitions, and foreign students. If the source has been found you can move on to the next step.

2. Ways of engaging prospective students must be defined. Among them we can mention:

- agitation, advertising, meetings with high school students and their parents;
- inviting the latter to open days held at your institution;
- creating all possible conditions for current students who will share their experience with relatives, friends and acquaintances;
- simplification of requirements set by your institution regarding international students (if they are).

3. The last but certainly not least important step is involving students in the abovementioned

activities and supporting their initiative. You should explain to them the importance of events they will hold for the faculty and institution as well as for their future job. Current students evoke more trust than teachers and professors. Thus, high school students are not afraid of asking any kind of questions. Do not forget to encourage students; material rewards are also welcomed.

LESSONS LEARNT AND RECOMMENDATIONS

The practice we have introduced has proved to be efficient in terms of the increasing number of school-leavers that apply to our school. The decision to engage our current students in the process of recruitment of new students and the practice of stimulating their interest in it has a number of advantages and is able to bring new interesting perspectives. Young people are full of energy that can be turned to the benefit of the institution they study at. Students are not afraid of putting forward creative ideas that can be realized.

Moreover, we allow our students to participate in improving the educational process. It helps to develop social awareness. Because if leadership is not oriented towards bringing a positive impact, by seeking to contribute to society, it will only bring personal gain. We work with people that will have the skills to lead tomorrow's generation and to thrive in the new economy.

We also recommend other institutions that face the problem of enrolment decrease to consider international students as a valuable group of prospective students. Creating all necessary conditions for them to adapt to a new country and culture will facilitate resolving of the problem of insufficient quantity of students.

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6. Quality Assurance and Internationalization

Yerevan State University, Armenia

EXECUTIVE SUMMARY

The current case study focuses on the issues of developing and introducing the system of internal quality assurance and internationalization at Yerevan State University (YSU). It basically touches upon the concept of quality assurance followed by YSU, as well as procedures and measures taken to implement corresponding strategies to meet the requirements of ENQA. It is also spoken about the launch and development of internationalization processes at YSU pointing out the main directions and priorities for improving international cooperation, mobilities and joint partnerships between YSU and its external stakeholders.

The analysis provides qualitative and quantitative data on how the processes of quality assurance and internationalization were implemented at YSU. It first defines the conceptual basis for understanding the situation in the Republic of Armenia and especially in the educational sector prior to introduction of changes described. Afterwards, the methodology of implementing the processes of quality assurance and internationalization are analysed in detail. It is explained why, how and who is responsible for the successful realization of the activities under the above-mentioned topic.

Also, the case study touches upon the facilitators and obstacles faced within the processes of introducing the new systems. It is shown that due to corresponding measures taken (e.g. in-university regulations, external assistance, international projects, government aid, etc.) the institution is gradually resolving the existing and emerging problems, trying to sustain the positive results achieved through particular projects. Finally, we arrive at recommendations for the effective realization of management, structural and organizational changes.

BACKGROUND INFORMATION

Established in 1920, YSU has about 11,000 alumni to date. YSU provides high-quality education to ensure competitiveness of its graduates in the local area, as well as the global labour market. To deal with contemporary challenges and to effectively accomplish its educational mission, YSU continuously upgrades the profile and content of its educational programmes, applies modern teaching and learning methods, and provides students with effective support services.

Major structural changes in YSU's academic activities started in mid-1990s. In 1995 YSU changed the structure of its academic qualifications by establishing a two-level qualification system with Bachelor's and Master's degrees. In 2007 the ECTS credit system was introduced in all Master's programmes, then a year later in Bachelor's programmes. Currently, YSU runs 60 Bachelor's, 130 Master's and 70 Doctoral programmes that involve nearly 18,000 students (according to the data of January 1, 2013 there are 13,500 BA students, 4,000 MA students and 400 postgraduate students), 5,000 of which are part-time students. The

university has 19 faculties with more than 100 general and professional departments and one regional branch (campus) with 4 faculties in the town of Ijevan. YSU employs about 3,000 staff out of which 1,300 are the permanent academic staff (166 professors, 461 associate professors, 639 assistant professors and lecturers). 23 academicians and 26 correspondence members of the National Academy of Sciences are involved in teaching and research activities of the university.

The student/teacher ratio is 12.5:1. The University has its publishing house and library. YSU is one of the leaders of education internationalization in Armenia. Currently it has more than 200 cooperation agreements with international partner – universities and research centres all over the world. Besides bilateral interuniversity cooperation, more than 50 international research grants are implemented at YSU annually. They are funded by various international agencies and foundations and include grants from NATO SFP, ANSEF, NFSAT-CRDF, ISTC, Calouste Gulbenkian Foundation, Volkswagen Foundation, DAAD, OSI, Russky Mir and others. Currently YSU is actively involved in an EU funded TEMPUS programme. In recent years YSU implemented various TEMPUS III and TEMPUS IV projects in such fields as university management, internationalization and quality assurance, developing and upgrading programmes and curricula.

TYPE OF CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Internationalization

Quality Assurance

THE WIDER CONTEXT

After the collapse of the Soviet Union, there were significant changes in the educational systems of all post Soviet states. Armenia was not exclusion in this matter. The main characteristic of the post Soviet Armenian educational system was its division into two levels (Bachelor and Master) of higher education. Followed by a tense political and socio-economic situation between 1988 – 1994, plus 1988 earthquake and its devastating consequences, the quality of service provision on the territory of the whole Republic was significantly decreased. That also concerns the educational sector where due to low demand of qualified cadres in existing labour market and budget cuts for higher education institutions the quality of learning process sharply fell down.

Starting from 1991 a few huge migration waves launched in Armenia. They led to imbalance between the potential qualified specialists and the needs of the national economy. On the one hand, the fall of many industries in Post Soviet Armenia resulted in a situation where former specialists were not appreciated anymore and were not demanded in economy. For example, a lot of engineers and artisans lost their occupations, which were practically oriented. Instead, according to the ideology of information society and the principles of market economy, service provision and marketing appeared under great emphasis.

On the other hand, the transforming Armenian economy was not able to provide such a progressive advancement in the sphere of services and other non-production sectors of economy. It happened that there was a discrepancy between the cadres released by the universities and the ones needed by the labour market. As there was a challenge faced by the government of the Republic of Armenia to develop those sectors which may give more benefit with less investments, Armenia declared IT and Software development to be the

priority spheres of its strategic activities. Therefore, a great amount of new specialities and learning modules were introduced in all Armenian higher education institutions aimed at facilitating the establishment and empowerment of the above-mentioned sectors.

The process described had its impact on all higher education institutions of the Republic including its Alma Mater University, i.e. YSU. As stated previously, from 1995-96 academic years YSU applied a two level (BA and MA) educational system. The third degree, which realizes the three-year post-graduate specialization, also functions at YSU. This new Bologna system promoted new challenges for students, faculty and the university management as a whole.

One of such challenges faced by the students was a comparative autonomy in the learning process, which means that the Soviet type lecturing was not working effectively anymore, and students were forced to show creativity, individual thinking and ability to learn independently in order to deserve a good mark. As a result, the cut in lecture mode classes led to decrease of theoretical knowledge within students. But this does not necessarily mean that students were skilled practically. The existing educational system was not able to provide with appropriate and applicable instructions to the knowledge rendered. Also among the negative influences created by the new educational system is that a great amount of spare time rendered to students for the purpose of their self-learning and development is misused and spread aimlessly.

As a logical consequence of a few years isolation from the outside world in political, economic and cultural senses, the higher education system in the country also felt the lack of international cooperation and contacts. The newly established Republic Armenia started to be officially recognized in 1990s by different countries of the world. Thus, there was a need to establish new international relationships within all life spheres, including education and science.

The content of the internationalization process causes a lot of controversy. It can be defined as academic mobility, including and covering students and faculty/professors, staff, and researchers, development and implementation of joint educational programs or research projects, more intensive international cooperation and participation in joint projects, grants associations, networks. This process can be defined as a process of educational services by greater use of IT or creating other branches and campuses outside of physical alma maters. Internationalization can be interpreted as an educational integration, carried out by unifying programs, courses, and educational standards. It also includes a certain degree of unification of skills, abilities, competence, and all the results of the educational process.

Internationalization processes at YSU can be tracked starting from 1996 with the introduction of the Bologna system. A separate unit in charge of International cooperation issues was set which started to actively search for new contacts and partnership opportunities on republican, regional and international levels.

On the whole, starting from 1990s the Armenian higher education system faced two main challenges to be overcome, that of internal quality assurance and internationalization. These two priorities conditioned the further concepts, strategies and activity plans of the developing country's Alma Mater University.

RATIONALE AND INTENDED RESULTS

The above-mentioned situation and constantly updated criteria promoted for modernisation of higher education in developing countries, as well as different national and international programs aimed at supporting those processes prompted YSU to start working in the areas of internal quality assurance and internationalization. Certainly the main point of destination was to establish a viable system of internal quality assurance with corresponding cycles and mechanisms of its monitoring, evaluation and correction. Internationalization constituted a part of such a system. It was also taken as a priority since international cooperation affects all the spheres of university activity, including its management, scientific, research and educational processes.

The mission of the YSU Quality Assurance (hereafter QA) system is to foster trust in all spheres of university activity (education, science and public services) and to ensure that qualification of degrees awarded by the University and existing criteria are followed, constantly reviewed and effectively managed. The concept of “quality” in the system of YSU QA supposes joint application of the following principles; “correspondence to the goals set” and “adequacy to the goals set”. It means that YSU, its structural units and processes are qualified only at the correspondence to the goals stated. On the other hand, the goals themselves should be well grounded and applicable to stated objectives in higher education.

The main goals of the YSU QA system are:

- to maintain high criteria in all spheres of YSU activity;
- to establish a procedural and organizational basis for external assessment and accreditation of the quality of YSU and its educational programs, to provide a link between internal and external quality assessment processes;
- to support the constant improvement of quality education and development of quality culture at the University;
- to give opportunity to YSU for assuring itself, its stakeholders and external evaluators that the adopted QA policy, system and processes operate effectively;
- to provide YSU reporting on quality to students, employers, its founder (RA Government) and other financing organizations;
- to ensure that the quality of YSU educational programs meets the expectations of all stakeholders and that YSU alumnus get knowledge and skills which are demanded in the labour market.

Academic standards, programmes and courses, teaching staff, teaching and learning, student assessment, academic resources, support services and infrastructure, scientific-research activities are defined as the main areas for the new YSU QA policy. Corresponding processes and procedures, as well as the main players are defined for every QA sphere. Moreover, the role of the students and external stakeholders (alumni, employers and external evaluators) is clearly defined in every QA process. The policy also defines the organizational structure of YSU QA system dividing up the responsibilities between the main structural units and players involved in QA processes (see figure 1).

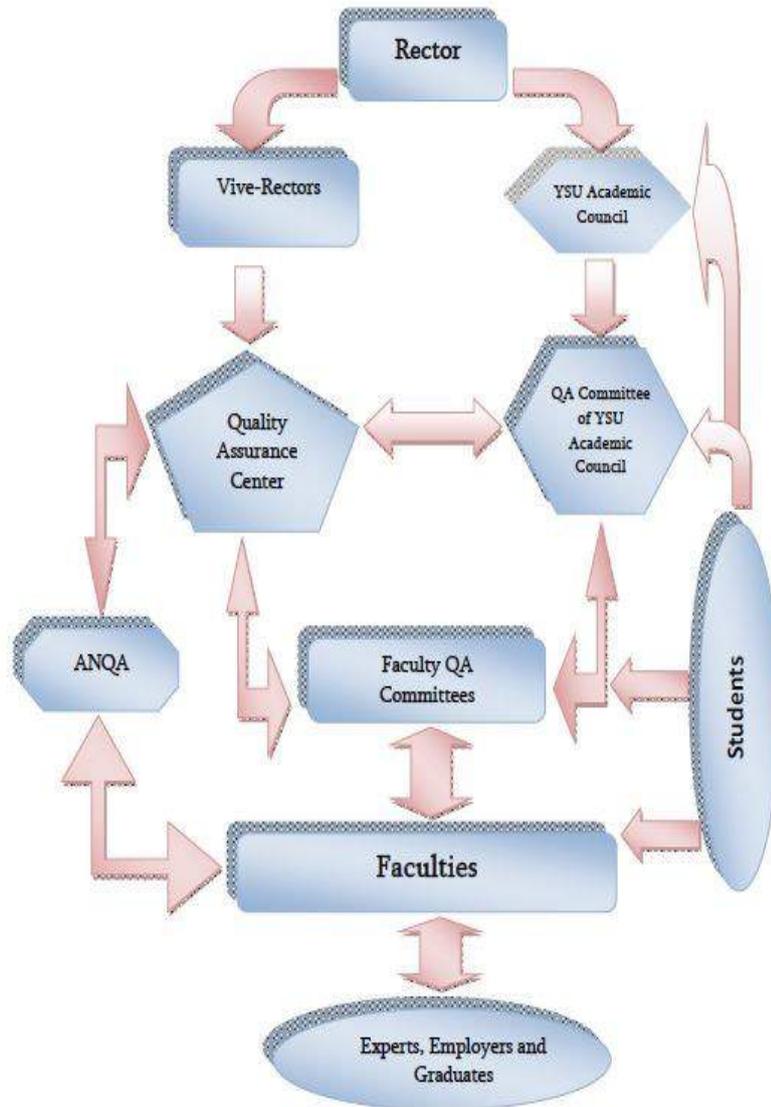


Figure 1 Organisational structure of YSU QA system

On the part of internalization, YSU was guided by such key directions and priorities as the positive impact in improving the quality of the educational process, professional training and quality assurance of education in general. The correspondence of the quality of education to the existing standards (particularly to the requirements of ENQA) today is of primary importance for YSU and the Republic of Armenia in general. The next important direction to the internationalization at YSU is the development of the joint research projects, which give an opportunity to develop the fundamental science and to commercialize research results. The process of internationalization at YSU also includes (but is not limited to) additional elements such as participation in international professional networks and international organizations, the involvement of students and teachers in various exchange programmes and grants aimed at internationalization, financial support for research projects or co financing and so on. The final aspect of internationalization at YSU outlines professional and student mobility and Intercultural communication.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

YSU QA strategy is formulated in YSU SP Objective 1b of the 1st Strategic Goal: “Introduce internal quality assurance system in accordance with the requirements of European standards”. For the implementation of this objective 9 strategies are defined in SP which are consistently called to life. They envisage development of new YSU QA policy (concept), introduction of institutional self-evaluation processes, expansion of academic programmes’ QA mechanisms and procedures, using of a valid, reliable and fair student assessment system, improvement of teaching staff QA processes, QA of learning resources and supporting services. The strategy envisages providing transparency and publicity of QA processes (Objective 1b, point 9) as well as the students’ and external / internal stakeholders’ feedback and participation in YSU QA processes in accordance with European standards of QA and ESGs requirements.

The YSU first QA policy was adopted in 2007. It defines the concept of quality in higher educational system, QA principles in EHEA, principles of quality culture formation in the institution, composition of YSU QA system, organizational structure of the YSU QA system, approaches of teaching staff evaluation, etc. However ESGs primary principles were not yet enshrined in this policy. New QA policy defines the notion of quality in YSU and the main principles of QA, as well as goals and objectives of YSU QA system, main areas of QA, the organizational structure of QA system, QA processes and procedures as well as on-going mechanisms of quality enhancement. In particular, the policy defines that the main goals of YSU QA system are continual improvement of quality of education and development of the quality culture at the University. Self- assessment and improvement, expanded participation of the teaching staff, students and external stakeholders as well as interconnection between internal and external QA processes are defined as one of the main principles of YSU QA.

The establishment of YSU QA system in line with ESGs requirements started in 2008. It is worth mentioning that separate mechanisms and procedures of QA had existed in YSU prior to that, such as student surveys (since 2002), teaching staff development programmes (since 2002), public information system (since 2006), graduate satisfaction surveys (since 2008), etc. However, a number of essential mechanisms and procedures of QA were missing, and the existing ones were not integrated in a common QA system. Thus targeted activities have been carried out in YSU during the last 5 years aiming at establishing a QA system meeting the ESGs requirements. Currently a number of QA mechanisms and procedures are exercised in YSU aiming at continuous improvement of the quality of academic programmes, the teaching staff and learning resources. They are as follows:

- student surveys on efficiency and quality of teaching (since 2002), due to which the professional and pedagogical qualities of the teaching staff as well as the quality of delivery of individual courses and study modules are evaluated. The results are used to develop and implement improving measures as well as in the tenured teaching staff re-election, promotion and rewarding processes (“Regulation of YSU Student Surveys on Teaching Quality & Effectiveness”, approved by YSU Academic Council (AC) in 2002, amended and revised in 2003, 2004 and in June 2010);
- teaching staff development programmes (since 2002) aiming at improving the professional and pedagogical skills of the teaching staff. The results are taken into account when promoting and rewarding the lecturers (“Regulation on YSU Teaching

Staff Development Programme”, approved by YSU AC in 2002, amended and revised in 2007 and July 2011);

- graduate satisfaction surveys on the education received in YSU (since 2008), through which the rate of YSU student satisfaction from the content of academic programmes and teaching methods, educational resources and student support services, organization of educational process and overall learning environment are assessed. The results are used for continuous improvement of the appropriate areas (“Regulation on Graduate Satisfaction Surveys from the Education Received in YSU”, approved by YSU AC in June, 2010);
- validation, internal peer-review and official approval of academic programmes (since 2012).

These processes target QA of YSU academic programmes in the stage of their development. The justification of the newly created programmes (social need, resource provision), their compliance with the requirements of national qualification framework and educational standard as well as the development quality of the programme are evaluated by these procedures. The procedures are just being implemented and applied to the assessment of the newly developed academic programmes (“Regulation on Approval of Academic Programmes”, approved by YSU AC in February 2011).

Annual monitoring and periodic review of the academic programmes (to be implemented in 2013) aims at evaluating the quality of the delivered programmes and their conformity with the set programmes goals as well as their continuous currency and relevance. The result of this process is the development and implementation of a plan aiming at improving the quality of the programme. These QA processes are planned to be implemented since 2013/14 academic year (Regulation on Current Monitoring and Periodic Review of Academic Programmes, approved by YSU AC in June 2011).

All the above mentioned mechanisms and procedures of QA are officially approved by YSU AC. They have been published and distributed to all academic and administrative units of the University and are posted on YSU official documents’ website (www.documentation.y-su.am) to make it available for the external stakeholders and the public. Students and external stakeholders (alumni, employer representatives, external evaluators, Ministry of Education and Science, etc.) have their special participation in all QA processes mentioned above. In particular, at least two external experts are included in the internal programme peer-review process of academic programme approval. It is encouraged to include external experts from different professional organizations and associations, as well as regulating bodies of the professional field. It is envisaged to use student and graduate survey results in the monitoring process of the academic programmes. At the same time the results of graduate surveys and employer satisfaction surveys from the graduates are envisaged to be used in the process of periodic review. External experts can also be included in programme periodic review processes. YSU student representatives are involved in Permanent QA Committees of YSU AC and Faculty AC as well as in the committees and working groups (one student in each) that carry out YSU institutional and programme self-assessment processes for accreditation and prepare appropriate reports.

The external stakeholders are involved in YSU QA processes as final graduation exam and

graduation thesis defence committee chairmen and members. According to Armenian Ministry of Education and Science Regulation on Conducting Final Attestation of Graduates in the Republic of Armenia higher education institutions (2011) the chairman of the mentioned committees and at least 50% of the members must be external stakeholders (representatives of other higher educational institutions, scientific-research organizations, employers, leading specialists of the given fields). This enables responses on efficiency of YSU academic programmes and the quality of the graduates through the feedback mechanism. Formerly there were no special units or bodies managing and carrying out YSU QA processes. Overall overseeing of QA has been carried out by the Vice Rector on Educational Affairs up till now, while current QA processes (student surveys, graduate satisfaction surveys, teaching staff qualification improvement programmes, etc.) are conducted by the Educational-methodical Department (EMD), Educational and Research Centre of IT and by the staff of University Education Development Unit and Department of Extension Programmes.

The Department of Quality Assurance and Control was established within YSU EMD in March 2008 on the basis of YSU AC resolution and the Rector's order. The main functions of the department were implementation, realization and monitoring of the above mentioned QA processes. YSU Academic Council (AC) plays an essential role in YSU QA processes. It approves legal acts on QA and new educational programmes. Each semester AC hears the reports on the results of student surveys and annual reports on graduate satisfaction survey results made by the Vice Rector on Educational Affairs and makes appropriate decisions (if necessary) to improve those processes. YSU AC Permanent QA Committee (QAPC) was established in February 2012 to form the regulatory and methodological basis of YSU QA processes. 7 AC representatives of administrative and teaching staffs and student body are involved in the committee. The committee has its working procedure (approved by YSU AC in April 2012) which defines the main functions of QAPC:

- development of the drafts of QA legal acts;
- providing recommendations and suggestions on implementation of QA standards, processes and procedures as well as on approval of new and reviewed academic programmes;
- cooperation with other YSU QA structures and units (Figure 1).
- YSU QA policy defines centralized regulation of QA processes and their decentralized implementation. Therefore Faculty Academic Council Permanent Quality Assurance Committees (FQAC) was established in all 19 Faculties of YSU in March 2012 to effectively carry out QA processes in academic units (faculties, centres, and departments). The committees consist of 5 members including one student representative. The main functions of FQACs are:
 - providing recommendations to the faculty AC on QA issues;
 - conforming the academic programmes and courses to the requirements of YSU academic standards;
 - discussion of student survey results and suggestion of improving measures, etc. In March 2012 YSU introduced a process of institutional self-assessment and in October 2012 a pilot programme self-assessment was launched in Faculty of Biology to provide adequate basis for external quality evaluation and accreditation.

In March 2012 YSU Self-Evaluation Committee was established by YSU Rector's order to

carry out the self-evaluation processes at the University. It consists of 7 members including one representative from the students and external stakeholders (alumni). 10 working groups, each consisting of 4 members (including one student in 8 of the groups), were established to conduct self-evaluation according to Institutional State Accreditation Criteria in various areas of YSU activities as well as to prepare the drafts of the subsequent reports. The self-evaluation working group of Biology faculty consists of 10 members (including one student). The Self-assessment Committee will review the self-assessment reports made by the working groups, bring them together in one report, review the comments and suggestions of internal and external stakeholders on the report and make the final version of YSU self-assessment report, which should be published and be publicly available.

The transition to a two-level education system at YSU in 1995 – 1996, as well as the Bologna Declaration signed in 2005 also contributed to the development of external relations and internationalization of YSU. These two serve as guidelines for the international activities undertaken by YSU thus encouraging the integration of YSU educational system into the well-experienced scientific- educational networks. Internationalization process at YSU is characterized by the following key achievements and activities completed for the recent years. The main results correspond to the already mentioned targets on five directions. YSU cooperates with local, as well as with foreign partners establishing consortia with leading higher educational institutions for the realization of various joint projects. The number of YSU employees and students involved in various international programmes has significantly increased in recent years (see table 1 and table 2).

Table 1 The mobility of YSU employees in 2009/10 – 2011/12 academic years

The number of YSU academic staff on secondment per continents	2009-2010	2010-2011	2011-2012
Europe	220	239	264
Africa	3	1	1
North America	28	20	22
South America	2	1	-
Asia	23	62	38
Total	276	323	325

Table 2. The mobility of YSU students in 2009/10 – 2011/12 academic years

The number of students on secondment per continents	2009-2010	2010-2011	2011-2012
Europe	110	94	166
Africa	6	20	-
North America	13	8	6
South America	-	-	-
Asia	34	35	13
Total	163	157	185

In the sense of involvement in networks, exchanges, international grant programs and other research projects the progress made by YSU can be followed through the increase of contacts recently signed with different universities around the world, as well as with international organization and scientific-educational networks and more than 30 grant programmes annually implemented by individual researchers (see table 3).

Table 3. The contracts signed by YSU with universities, research centres, funds and companies in 2009/10 – 2011/12 academic years

	2009-2010	2010-2011	2011-2012
1	Northeastern State University, Russia	Calouste Gulbenkian foundation	The Academic Swiss Caucasus Net, Switzerland
2	Saint Petersburg State University, Russia	Gumilyov Eurasian National University, Kazakhstan	Institute for Humanities and Cultural Studies (Tehran, Iran)
3	Saint Petersburg State University of Engineering and Economics, Russia	A cooperation contract on establishing Armenian- Indian Center for Excellence in ICT	University of Guilan, Iran
4	National University of Pharmacy, Kharkov, Ukraine	North Ossetian State University, Russia	University of Cadiz, Spain
5	Free University of Berlin,	Maxtumquli State University,	Tver State University, Russia

YSU also made a step forward in the sense of intercultural communication. In the last three years the number of foreign students studying at YSU has decreased which is accounted for by the number of Iranian incomings. In the meantime, it is worth mentioning that the number of foreign specialists cooperating with YSU seems to remain unchanged (see tables 4 and 5).

Table 4. The number of the foreign students at YSU 2009/10 – 2011/12 academic years

The number of foreign students at YSU per continents	2009-2010	2010-2011	2011-2012
Europe	400	324	222
Africa	1	1	0
North America	5	3	0
South America	-	-	-
Asia	395	303	-
Total	801	631	222

Noteworthy among the internationalization-related achievements of the last three years is the creation of Vice deans' posts on international cooperation in several faculties (e.g. Faculty of Law, International Relations, Economics, Sociology, etc.), which has enabled to be in permanent connection with university's central unit of Internationalization and with separate scientific-educational subdivisions. Those responsible for international matters also assist with organizing and managing of information about various programmes, as well as with organizing events within their framework.

Table 5. The number of foreign professors at YSU in 2009/10 – 2011/12 academic years.

The number of foreign professors at YSU per continents	2009-2010	2010-2011	2011-2012
Europe	12	11	6
Africa	-	1	1
North America	-	2	2
South America	1	1	-
Asia	2	1	6
Total	15	16	15

YSU has international cooperation agreements and contracts with 200 universities, institutions and international organizations in almost 50 countries all over the world. Among them are: Moscow State University named after M.V. Lomonosov (Russia), Saint-Petersburg State University (Russia), Belarusian State University (Belarus), Bologna University (Bologna), University for Foreigners of Perugia (Italy), University of Rostock (Germany), University of

Siegen (Germany), National Institute of Eastern Languages and Cultures (France), Montpellier University (France), University of Antwerp (Belgium), University of California (Berkeley, USA), Ann-Arbor University of Michigan (USA), Aristotle University of Thessaloniki (Greece), University of Warsaw (Poland), University of Cairo (Egypt), University of Aleppo (Syria), I. Javakhishvili Tbilisi State University (Georgia), Turkmen State University named after Magtymguly (Turkmenistan), Kuwait University (Kuwait), Eurasian National University named after N. Gumilov, etc. Besides, YSU is actively involved in many grant and international projects such as TEMPUS, DAAD, USAID, ISTC, CDRF, etc. YSU has a great involvement in such international networks as Erasmus Mundus, Network of CIS Universities, International Association of Universities, Eurasian Universities Association, Black Sea Universities Network, which gives opportunity to get constantly engaged in great local and international educational consortiums, thus stimulating international mobility and projects on experience exchange (YSU SP, Objective IX. b,8). During recent years, in the scope of the involvement in the mentioned grant and international projects, YSU has not only diversified and developed the scope of its cooperation, but also promoted to open centers and structures in YSU that improve the cooperation, achievements and guarantee their continuation.

Thus, Centre for European Studies, which has been functioning at YSU since 2006, is the first institution in Armenia that offers interdisciplinary education on MA level, as well as scientific and experimental researches in the field of European Studies. Providing qualified and competitive knowledge, the centre supports stability of knowledge and European values-based society, as well as organizes interdisciplinary courses, promotes the effectiveness of European integration of Armenia, both theoretically and practically, with the help of interdisciplinary and professional education. The centre also functions as European information centre in Armenia suggesting professional literature in the field of EU and International Law, Political Science and Management, Human Rights and Democratization, etc. Due to the efforts of "Russkiy Mir" Foundation and YSU administration, YSU Russian Centre launched on February 7, 2008. The Republic of Armenia Ministers of Science and Education and of Culture, the Deputy Chair of the Russian Federation Council, as well as professionals of the fields of science and education from both countries, representatives of Russian Federation's Embassy in Armenia took part in that ceremony.

The center is the first in its type within the Post-Soviet area and is called to support those who are interested in Russian language, history, culture and Russia in general, through informative, educational, constructive and communicative means. Another example of internationalization is the development and implementation of the project "Armenian Virtual College", financed by Armenian General Benevolent Union and is considered to be the achievement of YSU IT center. The University has functioned since September, 2008, rendering everyone in this scope the opportunity to obtain knowledge on Armenology through online education. The activity of the University stimulates development of Armenia-Diaspora relationships enabling Diaspora Armenians to be well-informed about their country's history, culture and the related issues.

In 2009, YSU took on a qualitatively new level in the development of internationalization by the start of Tempus QATMI project. The project was aimed at strengthening the policy of internationalization by improving organizational and service infrastructure of the University

in line with the strategy of quality assurance and Bologna process. In the framework of the project, YSU top management and some ICO representatives took trainings in European countries, returning armed with the leading experience of internationalization and the modern approaches of its implementation.

On 19th June 19 2010, in the presence of Armenian and Russian presidents, an agreement was signed between YSU and St. Petersburg University, which was directed to the development of scientific communication between scientists and students in the field of Chemistry, Economics, Oriental Studies, International Relations, Applied Mathematics and Modification of Mathematics, Philology, Censorship, History and Journalism. In the scope of this cooperation, two students from the YSU Faculty of Oriental Studies studied at St. Petersburg University for one academic year, afterwards continued their education at YSU.

YSU closely cooperates with regional scientific - educational institutions. The vivid examples of it are the Centre of Armenian Studies in Tbilisi State University and the Centre of Georgian Studies in YSU. In the field of Oriental Studies the best example of internationalization is the cooperation agreement between YSU and L.N. Gumilyev Eurasian National University, Astana. In the framework of the latter the Centre of Kazakh language, literature and history was opened at the YSU Faculty of Oriental Studies in 2010 which has been furnished by the assistance of Kazakh side and functions under the auspices of the president of Kazakhstan.

On 7th November 2011, Armenian – Indian Excellence Centre was officially opened in the scope of the cooperation between Armenian and Indian governments, which stimulates its activity by enterprise incubator fund (Armenian side) and C-DAC center (Indian side) at the YSU Faculty of Physics, offers research and development projects and projects on exchange, and organizes informative technological courses for students and professors, as well as for teachers.

YSU is actively involved in various international projects along with diplomatic representatives accredited in Armenia, such as IREX, British Council, OSI, USAID, which stimulate the mobility of students and Academic staff.

Today, TEMPUS IV project functions in YSU to stimulate University-enterprise relationships which aims at establishing mutually beneficial effective cooperation between educational and industrial sectors with the help of European leading experience on the cooperation between Higher Educational Institutions and business. The enterprise cooperation committee founded at YSU will be the main link between the university and enterprise and will provide the commercialization of scientific research works (see YSU SP, Objective IX a, 3).

In the sense of international exchange, Erasmus Mundus ALARKIS, BACIS, IANUS, WEBB and ELECTRA projects run at YSU for now, which aim at providing mobility of students, professors and administrative staff of consortium member states from EU member states to developing countries and vice versa (see YSU SP, Objective IX. b, 6).

Along with the above mentioned achievements there are some difficulties, which influence the complete productivity of cooperation process. Thus, it is important to mention, that some bilateral and multilateral agreements signed by YSU don't function properly or don't function at all. This is connected with two main problems. First, concrete activities, plans,

short-term and long-term objectives and problems are not mentioned in some agreements, which mean that an agreement is nothing in itself, as the theoretical part of its implementation is absent. The second problem deals with the scarcity of International Relations Administrative staff, which, because of having other technological and constructive functions, is unable to provide proper assistance to promote and monitor the implementation process of the agreements. Thus, the study of new opportunities of international relations must be in accord with its implementation vision and the availability of necessary resources.

RESOURCES REQUIRED AND USED

YSU provides considerable human, material and financial resources to prepare conduct and process and finalize the results of student and graduate surveys. In particular, human resources are involved not only from the units directly responsible for QA processes but also from other central and faculty units providing academic processes. The main units and bodies involved in the system are introduced in the organizational scheme of YSU QA system in figure 1.

Creation of an internal QA system complying with ESGs requirements required a necessity to establish an independent central specialized YSU structure aiming at conducting broader and professional QA functions. Thus YSU Quality Assurance Centre (QAC) was established on the basis of the University Education Development Unit and Quality Assurance and Control Department by YSU AC resolution (June 2012) and the Rector's order (July 2012). QAC Charter was approved by YSU AC in September 2012. The main aim of QAC is to promote implementation of internal QA mechanisms and procedures in line with ESGs requirements as well as continuous development of quality culture. The framework of the Centre's functions is defined by its Charter. In particular, YSU QAC together with other administrative and educational units and bodies organizes, implements and monitors QA mechanisms and procedures defined by YSU QA policy. Since the Centre has just started its activities, it is still early to make conclusions on the effectiveness of its activities.

The director of QAC is YSU associate Vice Rector on Educational Affairs. He is directly responsible for implementation of QA processes at the University. The centre employs 5 full-time staff members (1 director, 2 leading specialists, 1 specialist and 2 part-time specialists). The division of responsibilities among the staff members is defined by the Charter. The centre has 3 offices in the central building equipped with necessary furniture and modern technology.

A great portion of financial resources for the whole process of Internationalization at YSU comes from international grant project and Government regulations. Among such is Tempus QATMI project which considered Internationalization to be an integral part of Quality Assurance process. The overall budget of the project was 850,408€ and it was intended for a 3 year period. In the framework of the project a big portion of YSU staff took part in trainings and study visits devoted to Internationalization issues. That provided the needed quality human resources for ensuring the sustainability of the project and for making qualitative changes in the structure of the management and different services rendered by the University.

FACILITATING FACTORS

YSU has a clearly defined QA strategy with thoroughly developed objectives and measures for their accomplishment, which are consistently carried out. The institution has ten-year experience (since 2002) of conducting student surveys on a semester basis that aim at improving teaching efficiency and quality. It has been continuously developed during these years. Long-term experience of conducting student surveys has contributed to formation of quality culture elements at the University. YSU has four years' experience (since 2008) of implementing graduate satisfaction surveys on the education received at YSU, which has been regularly reviewed and improved. The set of YSU Key Performance Indicators promotes targeted and more effective organization of University activities. With the help of those indicators YSU assesses the results of its activities quantitatively, reveals its strong and weak points, and compares them with the results of its previous years and the results of other counterpart higher educational institutions for more targeted implementation of improving measures.

The “Bottom-up” reporting system existing in YSU is a unique “platform for insuring involvement of external and internal stakeholders in the University evaluation processes. It also enables to reveal the strong and weak points aiming at developing the measures to improve the situation. YSU’s transparent way of functioning also promotes formation of feedback with the stakeholders. This transparency is provided by open discussions of reports and other important issues in YSU and faculty academic councils (AC) and boards, the YSU network information system and interactive website, various guidebooks and handbooks on education organization, etc.

The students are involved in YSU and Faculty ACs’ Permanent QA Committees, YSU Self-Evaluation Implementation Committees and individual working groups, and most important – in various student surveys. For internationalization processes, the following factors contributed to the success of activities performed:

- multiple international relations, which are testified by bilateral and multilateral agreements with the leading universities of the world (with 200 universities, institutions and international organizations in about 50 countries);
- the participation in various international programmes, including its involvement in international scientific-educational networks and consortia.

YSU cooperation with local partner universities and other institutions is also at a high level, which can be used for the establishment of mutually beneficial relations with their partners. Within the framework of different international projects, YSU administrative and academic staff had trainings in leading scientific and research centres, got experienced and specialized. In recent years the number of outgoing YSU teachers and students has increased. The YSU teaching staff is involved in the English language courses in the framework of the quality improvement programme. Similar courses are organized for the administrative staff as well.

CHALLENGES AND OBSTACLES

As has already been mentioned, the YSU QA system is still in the phase of formation and hasn’t been substantially reviewed. However, formerly existing components of the system have been periodically reviewed and improved based on the results of their implementation. Thus the first policy of YSU QA was adopted by AC in 2007. As it didn’t meet the basic

requirements of ESGs, it was completely revised and adopted by AC again in 2012. At the same time it is worth mentioning that YSU still lacks a centralized information system with a common database. It is a strategic issue for YSU which is reflected in YSU SP (Objective V.b): “Create unified central information system of the University and ensure its accessibility for all University students and employees”. For the realization of this issue certain steps are foreseen in SP.

Some activities are also foreseen by World Bank grant project “Development of YSU internal QA System and Implementation of Self-Evaluation Process” which intends “Creation of internal quality assurance/accreditation online information system and virtual resource room”. It will enable to provide online feedback from students, alumni (e.g. surveys), lecturers, external quality evaluation bodies and other stakeholders. It is planned to launch the virtual database/resource room at the end of 2013. It will give additional opportunity to external evaluating organizations to carry out the process in well-grounded way.

One of the challenging issues in the process of Internationalization at YSU was the knowledge of foreign language within the academic and administrative staff of the university. That hindered the effective and comprehensive communication with international partners, caused difficulties in acquiring new skills and knowledge promoted in other languages, etc. The improvement of foreign language competency at YSU is also considered as an important condition for having visiting professors at YSU on a regular basis. The knowledge of English language among 40% of YSU administrative staff is weak, among 30% average, 20% are almost fluent and 10% don't know the language at all. The index, among the academic staff is the following, among 25% the knowledge is weak, among 45% is average and 20% fluently communicate in English.

At the same time, it is worth noting that the system of organization of language courses for all students and professors functions at YSU, which in the case of students means a foreign language course included in the curricula and in the case of the teaching staff is expressed in the form of foreign language trainings and exams. They are organized by Postgraduate Additional Educational Department, in the framework of an obligatory five-year training programme for academic and administrative staff. Particularly, a great number of employees from different scientific-educational and administrative departments are currently involved in the credit course of English in academic environment and have already gained credits. We should mention that the employees give a great importance to foreign language courses among the other included training courses, which states the active display of internationalization trends of the institution.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Introduction of the QA system and Internationalization activities at YSU is a real step forward for the institution with a former Soviet type management and education system. These processes brought into a qualitatively new level the concept of university development, its organizational structure and the strategies to reach the goals and objectives stated for the nearest future. In particular, those measures to be taken have been integrated in the development and promotion of YSU's Strategic Development Plan (2010-2014) (hereafter YSU SP) which identifies the present state of affairs and makes an attempt to foresee the future of the University, indicating the most favorable ways of its development. The

Strategic Plan has based the development strategy of YSU on the following concepts: mission, vision, main values, strategic goals, supporting goals, operational priorities and specific activities.

The fulfillment of the University mission and vision is conditioned by the realization of the three strategic goals defined in the Strategic Plan as follows:

- Quality Education that implies 5 objectives with 34 respective strategies;
- Quality Research and Innovation that implies 4 objectives with 28 respective strategies;
- Community Involvement and Services that implies 2 objectives with 16 respective strategies.

Hereby, indicators of periodical progress assessment have also been set in order to check out the performance progress of each of these strategic goals. YSU has established a number of mechanisms and procedures to evaluate the implementation progress of the strategic goals. In order to evaluate the implementation process of YSU SP, the Work Plan of YSU SP 2010-2014 was developed (approved by YSU Academic Council in 2010). For each strategic objective the document presents a detailed plan of actions/measures, implementation deadlines, responsible bodies/persons and required additional resources, if needed. This tool enables to manage the implementation process of the SP and make corrections if needed. At the end of each academic year the implementation of the Work Plan is discussed and assessed first by YSU Academic Council and then by YSU Board.

Each YSU unit needs to devise its own development plan based on YSU SP following the examples of Faculty of Law and Ijevan branch. In order to monitor the SP implementation progress, “YSU Key Performance Indicators” have twice been elaborated and published (for 2003-2009 and 2005-2010 respectively, the set of “YSU Key Performance Indicators” for 2007-2012 is to be published soon). The document is an analytical study presenting the dynamics and analysis of the key indicators concerning all the 6 major areas of the University activity (see “YSU Key Performance Indicators”, Yerevan 2009, 2010).

In order to implement YSU’s Strategic Development Plan, short-term annual operational plans are elaborated. In particular, monitoring is conducted to check out the performance of the planned actions for the given academic year. For instance, in 2010-2011 and 2011-2012 academic years the implementation of actions/measures designed to meet the objectives defined in the Strategic Plan for those academic years was discussed at YSU Academic Council final sessions of 2011 and 2012 and was approved by YSU Board. The performance of the plans is presented in the annual reports of the Rector in the form of annex.

SUSTAINABILITY OF THE GOOD PRACTICE

The existences of follow-up and review processes in the QA system, as well as the bottom-up reporting at YSU constitute the main guarantees to sustain the positive changes achieved hitherto. Particularly, of great importance is the Work Plan of YSU SP envisioning the main activities for the upcoming 5 years, units/persons in charge and deadlines for their implementation.

Another tool to constantly monitor the QA processes and upgrade them on necessity is the

Self-Assessment report developed and submitted for the external evaluation. This document contains the main analytics of the University activities and points out those challenges, achievements, threads and opportunities to be overcome for reaching the quality level corresponding to ESG standards. With the help of self-assessment report all university units are informed about the current stage, development of in-University activities as well as get an idea of what further improvements are needed to ensure the quality services provided by the University.

Finally, the sustainability of YSU QA process is endured by the operation of a specialized unit (YSU Quality Assurance Centre) responsible for all activities undertaken in the framework of quality assurance. Thanks to devoted and specialized centre staff all processes connected with internal and external quality assurance and properly managed and monitored.

TRANSFERABILITY OF THE GOOD PRACTICE

Probably the most important aspect of providing quality services and constantly upgrading them is the communication system with the stakeholders of those services. The existence of systems providing information to internal and external stakeholders is essential for ensuring the transparency of YSU activities. For that purpose a number of internal information mechanisms are existing in YSU. They are as follows:

- Annual report on the results of YSU activities, which summarizes the main results of the activities of the University academic, scientific, research and administrative units (see, for instance, YSU Activities for 2011-2012 Academic Year, Yerevan, 2012, 716 pages);
- YSU Rector's annual report to University Board where the results (including financial) of University activities of the previous academic year are summarized, YSU SP annual performance is presented and YSU budget for the next year is approved;
- Annual reports on the activities of YSU faculties and other structural units (institutes, centres);
- Set of YSU Key Performance Indicators which is published periodically and aims at introducing the results of University activities and its "health" condition through quantitative indicators as well as to provide with milestones to guide the YSU SP implementation (see YSU Key Performance Indicators for 2005-2010 AYs, Yerevan, 2010, 95 pages);
- Annual reports on the results of student surveys on teaching efficiency and quality as well as graduate satisfaction surveys on the education received at YSU, which are reported to YSU AC for discussion;
- "Super Vision", a central university network information system, which provides information on student academic progress and mobility as well as other educational processes and makes the large database on educational processes available;
- The YSU Course Catalog and Student Handbooks, which are published annually since 2008, available for internal and external stakeholders in published, electronic and online versions. It provides full information on organization of education, study programmes and individual courses at YSU;
- The information posted on YSU website (www.y-su.am) is related to internal processes and procedures. It enables students, future applicants and other external stakeholders to get acquainted with the University and its educational and scientific services and activities. The website also provides with feedback opportunities

- (questions and answers);
- Regular collection, analysis and publication of quantitative and qualitative data on student body and academic progress;
- The results of randomly implemented internal monitorings aiming at assessing educational and research activities of the given faculty, which are discussed in Faculty's AC and later in YSU AC. Afterwards appropriate recommendations are provided to implement improving activities.

LESSONS LEARNT AND RECOMMENDATIONS

A very important role in organizing and managing the processes of QA and Internationalization at YSU was played by YSU SP (Strategic Plan) which outlines the main areas and directions for University Development defining also the priority goals and objectives to be implemented. Strategic Planning is the key point in initiating a certain procedure. It helps to put the process into the frames and develop a system for its monitoring, evaluation and improvement. It is worth mentioning that among all other higher education institutions currently being under accreditation process, YSU is on the list of few institutions having a comprehensive Strategic Development Plan and corresponding Work Plan for detailed activities to be taken.

Thus during the monitoring visit of the Holland organization conducting the external evaluation of YSU activity, it was stressed that having such a Plan will greatly help to smoothly organize the processes of Quality Assurance and Internationalization at the University. Recommendations for developing their own Strategic Development Plans were given to other universities operating in Armenia. It was stated that only after the Institution defines its mission, goals and objectives can it move forward with implementing the activities envisioned for certain university units. Therefore, taking into account the successful case of YSU in developing and introducing its Strategic Development Plan, it is recommended to other higher education institutions to firstly devise the conceptual and strategic basis for operational activities.

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7. Government Reforms and Their Effect on Higher Education Institutions in Georgia

Caucasus University, Georgia

EXECUTIVE SUMMARY

The case study shows the major changes that occurred in the Education Sector in Georgia, which have caused a cascade of changes among all HEI's. Such changes were partially determined as a result of Georgia having joined the Bologna Process and because of the Government's motivation to improve the quality of the education system. In this document, three major topics are addressed: introduction of the Unified National Exams, implementation of the Bologna process and challenges to quality assurance in various HE Institutions.

The case herein will discuss the challenges and opportunities which these changes generally impose on HEI and, specifically, on Caucasus University (CU). It explains the actions that were undertaken by CU in order to capitalize on opportunities and overcome various imposed challenges.

BACKGROUND INFORMATION

CU was established in 2004 on the basis of Caucasus School of Business (CSB), which was founded in partner with Georgia State University (Atlanta, US), in 1998. CU is now one of the most prominent private higher educational institutions not only in Georgia but also in the South Caucasus Region as a whole. It offers high quality education in its eight Schools: Business, Law, Media, Information Technology, Governance, Humanities, Tourism and Healthcare. Of the above mentioned schools, CSB is recognized as a school of global significance with far-reaching influences.

The increased desire to study business is a reflection of the business environment in Georgia, as it is becoming more and more stable. The evolving positive business environment does much to increase the level of interest in doing business, and thus in business education. Business becomes more and more attractive to, and plays a dominant role for, the new generation. CSB demonstrates these aforementioned tendencies. Accordingly, the demand for the Business School significantly increases from year to year. Moreover, CSB is considered a main source of skilled people on the Georgian labor market. Thanks to the CU's well-developed network in the business community, the vast majority of CSB students (90%) are employed even before they graduate.

Nowadays, CSB, with approximately 876 graduates and undergraduates, provides a world-class education through a combination of a well-designed curriculum (which is a close adaption of the Georgia State University one) and an exceptional faculty which has both the academic credentials and practical experience necessary to deliver an outstanding education. CSB equips students with the professional skills necessary for success in today's rapidly changing environment - the skills known as "21st century skills." CSB provides:

bachelor's degree, dual bachelor's, master's, dual master's, PhDs and certificate programs. School programs, curricula, syllabuses and assessment of students' knowledge of the system are fully consistent with the requirements established by the Ministry of Education and Science, the European Credit Transfer and Accumulation System (ECTS) norms. The academic staff and student body are actively involved in many exchange programs and international projects.

CU is the first educational institution to be granted the Georgian Quality award for high quality educational services provided to its students. According to the study conducted by a French consulting company and the rating agency "Eduniversal," CSB was ranked as the top business school in Georgia in 2011 and 2012. This recognition was based on the survey conducted among management, business administration, public and private schools and higher educational institutions of 153 countries.

The school is listed among the 100 top ranked the universities which participates in the "Microeconomics and Competitiveness" (MOC) program of the Institute of Strategy and Competitiveness at Harvard Business School. CSB is the member of IAUP (International Association of University President), BMD (Baltic Management Development Association), EFMD (European Foundation for Management Development) and NIBES (Network of International Business and Economic Schools).

CU is actively involved in programs funded by local and international organizations, including:

- EU International Cooperation FP-7 project "Perfection of Scientific Work at Universities and the Establishment of International Cooperation in the countries of the South Caucasus and Central Asia";
- INTAS's "Scientific Research and Development, Technological and Innovative Direction"; via Hellenic Aid project "KOMNINOI - Modernisation of Georgian Legislation and Training for Georgian Public Officials and Judges";
- Mason University's project "Investigating Organized Crime and Corruption in Georgia", Open Society Georgia Foundation project "East-East";
- LA MANCHE Project "Leading and Managing Change in Higher Education", TEMPUS IV Program of European Commission;
- MANAGE.EDU project "Efficient Education Management Network for LLL in the Black Sea Basin", Joint operational program "Black Sea Basin 2007-2013";
- Other important projects, in which CU participates, are funded by USAID, TACIS, DFID, the World Bank and UNDP. By participating in the aforementioned and many other projects, the researches of CU have gained the wide experience needed for training public officials and carrying out reforms.

In today's world, where up-to-date knowledge is necessary in order to become a full member of the business world, CSB's highly qualified academic staff and sophisticated western European and North American style of programs ensure development of all the necessary skills in order to meet the demands of the 21st century.

THE WIDER CONTEXT

The Higher Education Sector is one of the major and permanently developing parts of the Georgian Educational System. Many changes have been made and many reforms have been conducted in the Georgian Educational System in recent years. The aim of these reforms and changes has been to bring education in Georgia to the level of international standards, so that student's achievements, qualifications and degrees are recognized internationally. This would ensure both professor and student mobility between other universities and programs and more effectively integrate education and research.

With this goal in mind, Georgia joined the Bologna Process (Summit of Bregenz, 2005), and reforms to the Georgian Education system have, since then, acquired international significance. Higher education policy is determined by the Parliament of Georgia. In support of this policy, the Ministry of Education and Science of Georgia has an executive role, i.e. the Ministry issues regulations and individual decrees necessary to execute and regulate the policies worked out by the Parliament and Government. These policies are needed for the Ministry and higher educational institutions to properly function.

There are 57 higher educational institutions in Georgia, out of which 26 are public and 31 are private. All of them are accredited as higher educational institutions under the qualifications set forth by the Ministry of Education. Reforms to the centralized and monolithic educational system inherited from the Soviet Union started in 1995; however, they were sporadic and unsystematic. The reforms became more organized in 2001, at the same time as the commencement of the "Project for the Transformation and Reconstruction of the Georgian Educational System" and ultimately gained momentum and acquired new depth after the Rose Revolution, in 2004.

The aforementioned reforms had finally begun, whose main priority was to decentralize the system. Democracy and transparency, as well as public involvement, were now needed. During this period, radical and quick measures were taken. In addition, changes were made to general and higher education, as well as to scientific sectors; reforms were made to the educational budget, with emphasis on the introduction of new teaching methods. All the changes were systematic, sequential and can be grouped into following major topics:

- moving towards a three stage higher education system;
- joining European Credit Transfer and Accumulation System (ECTS);
- improving the legal facet of the Higher Educational System;
- implementing a new system for financing student education;
- putting into practice stricter control systems in higher education;
- setting up retraining programs for faculty and administrative staff.

From 2004 – 2007, the major laws which created the basis of the legal framework for the educational system were written with active public involvement. On the one hand, the new laws based all the activities of the educational and scientific institutions on the common principles of democracy, responsibility and fair competition, and on the other, they ensured these institutions would function within legal boundaries. In addition, after signing the Bologna Declaration, it has become compulsory for higher educational institutions to implement the main principles of the declaration; lifelong learning and continued education, which help them integrate into the European educational community.

In 2004, after “The Law on Higher Education” was passed and the reforms started in 2005, a three stage (Bachelor’s, Master’s and Doctorate) system of education was introduced, in accordance with the ECTS (European Credit Transfer and Accumulation System). In 2005, new departments “Quality Control Departments”--were set up at higher educational institutions as the law prescribed, i.e., after the notion and need for education quality control was identified and introduced into Georgian schools. The department was set up in both state-owned and private institutions.

Since 2005 – 2006 academic year, students can enroll in higher educational institutions only after passing the Unified National Exams, which ensures a fair playing field for all students. All people who have a high school education or an equivalent education are allowed to take the Unified National Exams. The new system of exams eradicated almost all corruption in higher educational institutions and made higher education accessible for all. It was in 2005 when free, higher education was formally abolished and a new meritocratic and educational grants program was introduced. Based on that program, tuition fees, including in private higher educational institutions, are paid completely or partially via government grants. The financing that a student will receive depends on the scores he/she receives on the Unified National Exams. Depending on the scores he receives, 100%, 70%, 50% or 30% of the grant will be awarded every year, as determined by the Ministry of Education and Science of Georgia. For example, this maximum amount is 2,250 GEL (approximately 900 EUR) per year. So, an incoming bachelor student who receives maximum scores on the Unified National Exams will be awarded a full scholarship for all four years of study. In 2013, the government allocated 18 million, instead of 10 million, for educational support, so more students will now be getting grants from the state.

In addition, the Unified National Exams do not overlook the interests of ethnic minority groups – the exams can be taken in the Russian, Armenian, Azeri, Ossetian and Abkhazian languages.

Since the 2009 – 2010 academic year, the same admission system was established for those students who were willing to enroll into master degree programs.

In the fall of 2007 the National Qualification Framework (NQF) was drawn up; the framework describes all the stages of education according to the results of education and competencies gained (knowledge and awareness, ability to apply acquired knowledge in practice, ability to make reasonable decisions, ability to communicate and ability to learn). From the above mentioned reforms and changes, we will try to discuss the ones which the CU deems to be essential. These include unified national exams, implementation of the bologna process, quality assurance.

RATIONALE AND INTENDED RESULTS

Due to the aforementioned reforms and difficult situation in the Georgian educational system, the government embarked on a new process, the aim of which was improvement of the educational system, so that it would meet international standards. The reforms started by implementing the Bologna process, whose chief aim was full integration of the Georgian educational system into the European educational community and recognition of diplomas or certificates issued by Georgian higher educational institutions outside Georgian borders. Introduction of the Unified National Examinations aimed at eradicating grafts and corruption

in the educational system, saving University resources and shifting responsibility to the State. The reason behind the introduction of ECTS credit system was the necessity to unify grading systems in place at different universities, in order to facilitate the recognition of students' accomplishments by various universities, especially in the process of mobility (when students decide to change universities).

Setting up the Quality Control Department significantly contributed to the successful achievement of universities' goals and objectives. It has set up a study which forecasts the most demanded professions (for Georgian as well as foreign students) over the next 10 years; in addition, universities are able to attract foreign students and work out appropriate programs which take into account both local and international markets' and employers' demands; teaching and learning are rigorously assessed; improvement of teachers' competency, recognition by international accreditation agencies and increasing students' ease of mobility outside of the country have been observed.

Finally, special mention should be given to a new practice - financing through grants. The decision was based on meritocratic principal, in which funds are distributed according to the success achieved by an individual during exams. Children from socially vulnerable families are given funds to, at least, partially, cover their tuition fees. This measure enables children from socially vulnerable families to realize their dreams and study at a major at the university of their choice, including among the most highly rated universities in Georgia.

CU not only had a desire and was prepared to meet international standards in education and improve the teaching standard, but also had a legal obligation to implement these reforms. The reforms had their advantages and disadvantages, but, all in all, the process has enhanced the competitiveness of University.

THE PROCESS OF INTRODUCING GOOD PRACTICE

Unified National Exams (UNE)

Since 2005, students have been able to enroll at higher educational institutions (HEI) only after first passing the Unified National Exams. With this change, the State took the responsibility of preparing and conducting the entry exams, which, in most cases, comprises three compulsory (Georgian language and literature, English language and General Skills) and one optional (for Business the optional exam is Math) exam. The optional exam was added in order to test specialized knowledge for different professions.

Introduction of the Unified National Exams as an entry requirement for students in Bachelor programs affected the admission system and process of all universities and institutes, which were accredited by the Ministry of Education and Science of Georgia. Like others, CU had to comply with this change, which caused various alterations in the working process of the University which are listed below.

Reduction of costs: before the introduction of Unified National Exams, all student admission procedures were carried out by CU. These procedures included, but were not limited to: preparation of tests in three to four subjects, pilot test of admission tests, proctoring of those tests, running those exams, evaluation and complaint handling. Besides, all these activities should be managed in a proper order and manner. All the aforementioned procedures

required many hours of work by many people, some of whom were hired specially for this purpose and some who shared responsibilities. After launching the Unified National Exams, the management and execution of all these activities transferred to Government, which automatically reduced the salary for the administrative staff hired for this purpose, freed up valuable time for faculty members and middle level management and reduced the requirement for examination-specific equipment/facilities.

Access to Government Funds: before 2005, only state-owned higher educational institutions were able to access governmental funds, which were distributed to students at their own discretion. The new system of grants, however, allocates funding directly to the individual student, and this is only paid to the institution (public or private) once the student is enrolled. The actual amount of the grants depends on the test scores from the Unified National Exams, as well as the cost of education at a given institution. The maximum amount of the grant is fixed at 2,250 GEL (900 EUR), of which the state pays 100%, 70%, 50% or 30%, based on the relative performance of the student on the exams.

From 2005 – 2010, grants were based solely on the test results achieved in the General Skills exam. Since 2010, grants are now given according to the results achieved in all the subjects taken. The fee at CU is 7,500 GEL (3,000 EUR), which is higher than the maximum grant provided by the government. However, considering the higher cost, the state funding still allays major financial pressures for students and their families. It has greatly contributed to an increase in the University's student body.

It is noteworthy that the introduction of the system of grants, and the increased competition between universities for better students and more selective programs, has resulted in some modifications to tuition fees as well.

Abolish the Corruption in HEI at the student admissions stage – UNE practically eradicated the corruption in every HEI at the student admissions stage of operations.

Increase the transparency and capability to see the ability of one student in comparison to another. Students are ranked based on their results in all admissions exam.

Increase competition among HEI for top-performer students – Because the admission exam scores are publicly available, HEI are more likely to attract top-scoring students into their institutions.

One of the weaknesses of the UNI was that students did not have a chance to change their university after registration (they registered in March, while exams were in July). But in 2013, this procedure was changed and, now, students are allowed to choose which university they wish to go to after they register, or even after they have received their results.

Implementation of the Bologna process

To improve the quality of higher education, Georgia joined the Bologna process, which demands the alignment of education systems and brings the existing system's operation closer those found in Europe. This involved many changes in the teaching process which are listed below.

Duration of classes.

With the new regulations one academic year should consist of 38-45 weeks, which means

that each semester should be 19-22 weeks. Before the change, one academic year at CU was 30-34 weeks, which meant that each semester was 15-17 weeks.

Grading Systems:

one academic year consists of 38-45 weeks;

one credit amounts to 25-30 hours (contact hours and hours spent on preparation of course materials);

the maximum grade for each course is 100;

division into five passing (A through E grades) and two failing (FX and F) grades; passing grades begin at 51%, with the difference between each successive grade set at 10%. Therefore, an A is between 91%-100%. A failing grade between 41-50% allows students to retake the exam, but a grade of 40% or lower means the student must retake the course.

As a result, it was necessary to alter the grading system at CU before the new rule was introduced, since it was based on the US system. Previously, there were four passing (A through D) and one failing (F) grade. In addition to that, in specialized subjects a D was not considered satisfactory and students were forced to retake those subjects. Besides that, A, B and C had three subcategories (i.e. B-, B and B+). The new grading system has changed everything and CU has had to accommodate those changes into its teaching process.

Calculation of credit hours

The inclusion of independent hours of coursework in to required credit hours made student evaluation somewhat “ambiguous,” and the time devoted to independent study was largely dependent on the course, intellectual aptitudes of students, and volume and availability of the literature to be read as part of the coursework. Prior to the introduction of the law, credits were calculated according to the hours spent in the classroom; therefore the previously apportioned three credits had to be changed to five or six credits. In implementing the new credit system, the CU administration took on the task of turning the credits earned by students before introduction of the new system into the new credit value, so that previously earned academic credits could be recounted correctly, which included the determination of grade point average and academic ranking of students for comparative purposes.

Qualification Framework of General Education

To improve the quality of learning and teaching, the Ministry of Education and Science adopted the “Qualification Framework of General Education.” Experts from HEI participated in drawing up this document, but it remains far from perfect. To comply with the demands of the framework, all existing programs were modified. For instance, CU had a BA program “American Studies – Cinema Studies”, the graduates of which earned a Bachelor of Humanities. However, the new framework stipulated that the program should be included in the Regional Studies or Arts program. The University gave the opportunity to those students who were already enrolled in the program to take those courses (at the University’s expense) which were considered mandatory, in order to receive a Bachelor of Humanities, thus, solving the problem. In addition, the School of Governance now has a program - International Relations, which according to the new “framework” is a part of Social Sciences. Therefore, CU had to modify the program and offer students additional courses. Due to all the above, CU thinks that, in this respect, the framework is very inflexible.

Introducing new programs was much easier than modifying existing ones. Therefore, based on the market demand, CU offered six new programs – Telecommunication, Archeology, History, Psychology, Sociology and HealthCare. The new framework made it necessary to renew the existing programs and syllabi so as to make them meet its demands. Otherwise, the University would have encountered difficulties when applying for authorization and accreditation.

Quality Assurance

There are two types of quality assurance systems that monitor the quality of education—centralized and decentralized. Oftentimes, countries with highly developed democracies and economies decide on a decentralized system, i.e. one regulated by national and international professional associations and organizations. Georgia, contrarily, decided on the centralized model. From 2004 to 2006, the responsibility was assumed by the Department of the Ministry of Science and Education, but later, in 2006, notwithstanding the fact that an independent National Center for Accreditation was founded and Accreditation Council was set up, the extent to which university representation in the councils was still quite limited. Members of the council were introduced by the Minister and approved by the Prime-Minister. The system is still operating today and university participation is not guaranteed, as it is not based on an election.

In the leading European countries, universities and university associations set up regulating bodies, as described above and decisions are based on self-assessment and peer-review. Self-assessments made by the universities are based on market demand, i.e. whether the programs offered meet market demands or not. In addition, they are motivated to increase academic freedom and improvement of services provided by universities.

After these changes, a new department, the Quality Assurance Department, was set up at CU. Since establishment of the department, quality management became a permanent part of the university. During each semester academic program directors, faculty and representatives of the Quality Assurance Department regularly meet each other and provide training/mentorship on teaching techniques, new administration procedures, used literature, etc. At the end of each semester students fill in the questionnaire drawn up by the university administration and evaluate instructors. Teaching quality is also supervised by the Monitoring Department, which monitors every aspect of the transfer of knowledge.

The internal system of quality control and management is based on evaluation analysis, and the program requirements of the university, in collaboration with partner universities. The department regularly seeks to enhance the quality of the educational and research processes at the university. It draws up techniques needed to assess students' knowledge and research, plans the timing of evaluation and assessment procedures, and later, assesses the processes themselves and draws up recommendations for their further improvement.

When assessing internal quality, the department puts major emphasis on: the educational programs, scientific work, teaching processes, the faculty, staff and all the structures of the Higher Educational Service - library, computer labs, etc. The department regularly checks the correspondence of the University's strategic plan, organizational structure and resources with its mission. The course programs are created in accordance with the forms (program

and syllabi forms) and instructions (for Bachelors, Masters and PhD programs) drawn up and created by the department. The educational program is evaluated with specific assessment criteria; after the assessment, a corresponding report is issued. Teams working on any of the programs are provided recommendations about the changes to be made. The programs are finally approved and adopted only after making the appropriate changes. The Department uses various evaluation mechanisms: self-assessments provided by schools, students, graduates and employers' surveys, as well as target research and the aforementioned criteria for program assessment.

Internal evaluation mechanisms operating at CU are as follows: the bylaws of the Quality Assurance Department, its action plan (annual), the rights and obligations of the university and of the students, the student ethics and behavior code, students' status, students mobility within the university, terms and conditions of registration, academic requirements of individual schools, mechanisms for providing students with appropriate education in case any of the educational programs are annuled, the rule on how to choose a profession within any of the educational programs, regulations for holding examinations, instructor evaluation forms filled in by students, syllabi tamplets, instruction for internet registration of undergrad students, Instructor's Code of Professional Ethics, instruction for creating a syllabus and peer assessment of instructors and classes. All the documents are posted on the University web page www.cu.edu.ge.

One of the essential activities of the Department is to conduct a student survey at the end of each semester; the survey covers such issues as: teaching methodology, university and school administration and the faculty. The results of the survey are included in the annual reports provided by each of the schools and the university administration. In the event that there are any significant faults or serious grievances expressed by the students about any of the programs or the educational process, a targeted investigation is carried out to assess the program/module/course. Different methods are used in the process of research and investigation, such as: document analysis, quantitative research, detailed interview and focus-groups. After obtaining significant results, modifications are made to the program, module or course for refinement or betterment of the instructor's performance.

To ensure continued improvement of the educational programs over time, the department is planning to carry out alumni and employer surveys. The alumni survey results will help to determine efficiency of the programs in career development, while employer surveys will demonstrate their expectations of graduates with various qualifications and education. Surveys of this kind will ensure that there is a feedback between parties involved and interested in the program and will help to make decisions for program development more efficient, as well as identify positive results in the programs.

The Department has written annual reports, which have been released to the University Executive Board and program directors. After receiving appropriate feedback in collaboration with school administrations, new action plans have been developed to improve the quality of education at the university. Georgian and foreign (freelance) experts, as well as graduate students and employers, are involved in the process of external assessment of the educational programs. The survey is conducted by means of a tailored questionnaire. The final assessment of the programs are based on summarizing and analyzing qualitative and quantitative indicators.

RESOURCES REQUIRED AND USED

The Unified National Exams has helped the university in reducing both financial and administrative resources. The sustainability of the new system is ensured by the high level of trust the society has put in it and is, apparently, a successful project funded by the national budget. Implementation of the Bologna principles allows the university to run 26 Bachelor's, 5 PhD and 14 Master's programs; the university employs 35 full, 40 associate and 27 assistant professors. The university employs more than 250 invited academic personnel – instructors over each academic semester, two semesters per year.

Bringing the existing programs in line with the relative requirements of the Framework of Higher Educational Qualification and devising new programs has led the University to employ 8 deans, educational program directors and professors for its various schools within CU. The academic personnel have incurred some overtime work which has been an added expense for the university. In terms of the implementation of the new credit system, no additional finances or human resources were required. In order to meet the framework's requirements, the President of the University issued a new order, at the suggestion of the Executive Board of CU. In guaranteeing quality assurance, the university has established a new department which employs four experts with adequate knowledge, expertise and experience.

FACILITATING FACTORS

The changes made in the educational sector at CU are caused by internal and external factors.

Internal factors include:

- acceptance and willingness to comply with the change in top and middle management at CU;
 - facilitative support to the members of administration who are affected by these changes;
 - strengthening the Quality Assurance Department and giving it new responsibilities;
 - highly qualified and motivated staff.
- External factors include:
- on-going consultation and coaching: representatives of the Ministry of Education and Science of Georgia, National Examination Centre and National Accreditation Centre conducted systematic trainings, workshops and meetings, whose primary purpose was to facilitate this process;
 - international partnerships: CU's International HEI partners have shared their experience in different areas affected by those changes. This ranged from sharing ideas to giving rights to use their syllabuses;
 - public demand: the introduction of the Unified National Exams is deemed a logical response to the public's demand for greater fairness and transparency in entrance examinations. The mechanism put in place for holding the exams and the high confidentiality while making up, printing and administering the tests has led the public to place a high degree of trust in the exams. The public soon became convinced that the exams were fair and objective because of the procedures of checking papers – each paper is checked by two individual experts, and even by a third when needed, the accumulated total is scaled and the results can be appealed.

The high level of public trust put in the exams has played a major role in further development and refinement of the process.

CHALLENGES AND OBSTACLES

Practically all innovations have advantages and disadvantages; the reforms carried out by the Georgian educational system are not an exception. However, the state's readiness and willingness for improvement and refinement of the educational system deserves special mention, albeit with some observed shortcomings.

There have been some negative consequences associated with the Unified National Exams, especially for CU, which might be attributed to the way which exams have been, or better yet, not been implemented. The exams in Math, Natural Sciences, History and Geography were not prepared, which was why the exams were given in three subjects only. Part of the problem is that public schools responded by only teaching what could be tested on the examinations, and education was not as well-rounded and diverse as it could have been. There was no fourth "optional subject" this fact led to a decrease in the level of education at CU.

In order to tackle this drawback, we had to start teaching some of the courses from the elementary level, since these were no longer being taught in high school. Math was among the subjects not being taught on an adequate level, and the university had to provide remedial courses. Normally, a basic level of math had been obtained prior to entering the university and students could start jump right into calculus. Now, CU has found itself acting as a tutor in teaching pre-calculus and having to lower the standard of instruction to cover what students had not learnt in high school. Fortunately, the situation improved when the state changed its policy and made taking the fourth subject compulsory, allowing the fourth subject to be determined by the universities. Another obstacle was a lack of required knowledge in some of the subjects; for instance, when teaching English, the university had to divide students according to their level of knowledge, and offer intensive courses to those having too low a level of knowledge.

We believe the most significant fault of the Unified National Exams is the fact that they have overlooked the future profession of children, thus lacking vocational applications – bachelor's programs are not grouped in the same way as they are categorized in other countries, which is accepted and standard practice outside of Georgia. We consider it appropriate to group professions needing knowledge in Math, in Natural Sciences, in Arts, Engineering and so on. In addition, children should not be given an opportunity to simply earn academic grades by randomly circling an answer in multiple choice tasks, while not being able to apply knowledge to real life scenarios.

Implementation of the Bologna Process created certain obstacles in modernizing educational programs. Namely, the university had to reject the American principle of earning credit hours – when one credit corresponds to a particular number of hours spent in class. The Bologna Process assigns credits not only for the hours spent in class but, also, to hours spent on independent work (25-30 hours). This change caused us to review and modify all the programs and re-calculate credits, so as to adapt them to the new system. However, difficulties have been encountered in this grading system too. Formerly, the university

considered a grade to be passing when the accumulated points exceeded 60%. However, according to the new regulations, a passing grade is any grade exceeding 51%, which decreases the quality of education. Hence, in order to ensure quality standards, the old GPA system has not been rejected and is successfully maintained at CU. Therefore, GPA is not included in any acting Georgian regulations.

Major difficulty was caused by converting the grades earned by students before implementation of the new system into the grades prescribed by the newly adopted system; we did our best not to do any harm to the students' grades and convert them in the most accurate way possible, so as to give an accurate picture of students' accomplishments on their transcript, to be measured by those outside of Georgia. Major changes were made to the educational programs because, before the introduction of the new system, the duration of a semester was 15 weeks. However, according to the new regulations, each semester comprises 19 weeks. This caused major changes to the topics covered during the semester; some topics were added or were apportioned in new ways over the semester. One of the challenges encountered by professors and program directors was drawing up a "Map of Competencies" needed for syllabi refinement and perfection. However, the highly-qualified academic personnel successfully overcame this obstacle.

There are some persisting challenges in quality control. The governmental entity regulating quality control continues to be a political instrument and does not fully reflect the interests and requirements of the academic community. Quality Regulations (however, it is not directly stated so in the documents) limits the academic freedom of universities and precludes fair competition, as it puts state-owned institutions and private ones in different positions. The standards are outmoded and do not reflect the modern teaching and university management principles as practiced on an international level.

Internal quality management mechanisms have started operating, but only formally. The qualification of the personnel working on quality issues need improvement. The retraining process of experts for authorization and accreditation is inconsistent, which is why experts' performance is not satisfactory, especially when they visit universities during the program accreditation process. The Quality Assurance Department of the university does not employ enough people - only four; there are eight schools at the University, meaning some schools cannot receive the benefit of the department, and, very often, the function is undertaken by program directors, which excludes the possibility of impartial and objective control of the program and, therefore, can be considered inappropriate.

INNOVATIVE DIMENSION OF GOOD PRACTICE

Implementation of the Unified National Exams was an innovation in the Georgian Educational system. The results achieved in such a short period of time – radical transformation of the post-Soviet educational system, eradication of grafts and corruption, dramatic increase in educational quality and putting all school-leavers in equal conditions - have been considered extraordinary. After joining the Bologna process, integration of the Georgian educational system into the European educational community opened new opportunities for the country.

Introduction of the new credit system can also be considered innovative, as it streamlined the process of acknowledgement of credits in the process of students' mobility. However,

the new grading system does not contribute to the enhancement of the quality of education. This was why the CU retained the system of Grade Point Average (GPA), despite the fact that the new credit system does not include it. All the above is, without doubt, innovative for the Georgian educational system and can be considered as a positive step forward.

SUSTAINABILITY OF GOOD PRACTICE

Sustainability of the reforms throughout the country and at the University is secured by the State in the first place, namely, legal entities were set up by the Ministry of Education and Science – the National Center for Quality Development and the National Center for Examinations. It is their responsibility to control, accredit and authorize higher educational institutions and ensure quality education.

At CU, the quality of education is ensured by the President, Vice-Presidents, Executive Board, university administration and academic staff. The National Center for Quality Development gives accreditation only if the University meets the requirements of the Bologna Processes; therefore, the University regularly monitors and keeps track of the processes. This is greatly facilitated by the Quality Assurance Department at CU, which carries out its activities under the supervision and consent of the University Executive Board; its activities are regulated by various orders and regulations issued by the President of CU. All of the above ensures the viability and sustainability of the system.

The fact that Georgian and foreign experts regularly monitor the process further increases the sustainability of the system. It is noteworthy that almost all the experts in their reports give positive reviews about the reforms. The high interest expressed towards the issue can be considered as a “warrantee” for sustainability of the system. Our cooperation and collaboration with European, American and Asian Universities is an indicator of sustainability of the processes at CU.

TRANSFERABILITY OF GOOD PRACTICE

The information given in the case study can be a good example for those countries which plan to carry out reforms of this kind. Therefore, in this document we have attempted to show the process from different points of view, to give the reader an opportunity to identify its advantages and disadvantages. All the reforms carried out in Georgia were mandatory for every university. That fact accelerated the process of transformation. In order to make reforms successful, two factors are necessary: backing by the Judiciary and Managing bodies of Government and high involvement of HEI to communicate the benefits of the reforms to the public.

LESSONS LEARNT AND RECOMMENDATIONS

One fact should be highlighted here: the process of transformation at CU is still ongoing, which will ensure the system’s viability and sustainability. The refinement of the Unified National Exams has the potential, over time, to improve a student’s level of knowledge upon completion of a degree or program. The implemented system of continuous evaluation and regular grading gives students an opportunity to use their time more rationally. Students are motivated by an opportunity to spend one or more semesters in one of our partner universities, especially when the credits earned there are accepted at their Alma Mater, CU. GPA is a guarantee that CU graduates will have a high level of education. Students are motivated to earn higher grades, as 51% is an unacceptable passing grade, and is insufficient

in helping students find gainful employment in today's competitive labor markets.

Activities carried out by the Quality Assurance Department guarantee the preparation of highly qualified professionals; therefore, the University should be generous in financing development and improvement of the department, including cultural enrichment and outreach activities, in addition to more opportunities for work experience, internships and academic and work exchange programs.

In regards to the system of grants, we believe the government should cover 100% of the tuition fee for students from mountainous regions or socially vulnerable families, thus focusing on diversity of the student body, not only at the state-owned universities, but also at private institutions. Gender and ethnic background should also be taken into consideration when it comes to financing of higher education.

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8. Experience in Assessing Students Skills and Knowledge

State Agrarian University of Moldova, Moldova

EXECUTIVE SUMMARY

Improving evaluation processes of the knowledge and skills of students has always been one of the priorities of State Agrarian University of Moldova (SAUM), during 80 years of its existence. At this time, in SAUM were introduced various forms and methods of control over the quality of learning material. Special attention was paid to this issue in the SAUM with the transition to the credit education system. Evidence of this is a series of experiments aimed at finding the best forms of students' knowledge assessment.

This study aims to identify the positive and negative aspects of different approaches to control students' knowledge and skills used in the SAUM. Among the forms used in the university special attention is paid to the analysis of the use of computer technology, differential method and the use of external experts to assess students' knowledge. Continuous monitoring of input in SAUM experiments led to the conclusion that the most appropriate form of evaluation for SAUM student knowledge is differentiated method, in which the student assessment occurs in several different ways, based on the specifics of teaching material, teaching and pedagogical principles.

The variety of forms pursues one main objective - to establish the motivation for the student to regular and intensive work on the material being studied. This differentiated approach, in our opinion, gives the best possibility for more objective evaluation of student knowledge and skills.

BACKGROUND INFORMATION

SAUM is the only higher agricultural education institution in the Republic of Moldova and the first higher education institution established in Chisinau in 1933. During 8 decades of existence, SAUM became a well-recognized higher education institution, asserting itself by training about 50000 well-known specialists, including over 1,000 from 67 foreign countries. Among the SAUM graduates we can mention a number of personalities: presidents of the country, prime ministers, members of Parliament, ambassadors, ministers, members of the Academy of Sciences, writers etc.

The university has eight faculties: Agronomy, Horticulture, Economy, Accountancy, Veterinary Medicine, Animal husbandry and biotechnologies, Agricultural Engineering and Auto Transportation, Cadastre and Law where are running 950 employees, including 350 full-time teachers (2 academicians, 29 Doctors Habilitatus, 25 Professors, 136 Associate Professors, 158 PhD's). Nowadays, SAUM has about 7000 bachelor, master, PhD students and offers 23 programs for Bachelor Degree, 32 programs for Master Degree and 16 programs for PhD. SAUM has a rich intellectual developed infrastructure aimed at supporting the work of teachers, scientific researches and social protection. SAUM has a large experience in preparing students providing a good learning environment.

University's research efforts are focused on supporting sustainable agriculture and agri-food security, to elaborate the legal aspects in the development of local trade, to create new plants varieties and hybrids, local varieties, animal and poultry cross breeds, improved breeds of farm animals, to expand intensive orchards and vineyards. From 1995 SAUM is member of European University Association (EUA).

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Assessing students knowledge

THE WIDER CONTEXT

Moldova joined the Bologna Process in 2005. As a result had been realized a number of reforms in the system of higher education. Among these we could mention: the organization of higher education system on cycles (bachelor 3-4 years and master 1-2 years) and the elaboration of new study program; the introduction of study credits ECTS in all higher education institutions; and in order to ensure a higher transparency for the graduates of the higher education institutions were compulsory introduced the European type of Diploma Supplement.

SAUM is the only higher education institution from Moldova who implemented some of these elements before country had joined Bologna Process. Already in 2001 had been implemented the system of ECTS credits and introduced the new study curriculum adapted for new 4 years bachelor degree. Together with this, was introduced the European model of Diploma Supplement in order to facilitate the recognition of University's diploma's abroad. The next step was the adaptation to the new study cycles of 3+2 years. In this context were elaborated new study programs.

For ensuring the correlation between agricultural development and European integration of the agronomic studies the SAUM elaborated the Strategy for the university's development on European coordinates. The implementation of such a strategy is impossible without the restructuring of the agronomic studies system that would allow preparing good specialists able to be involved in the labor market of Moldova, as well as abroad. Thus in 2001-2003 by SAUM had elaborated and implemented the university's agronomic curriculum with a structure among levels according to legislative documents for regulation of higher education.

As result, in 2005 for the first time in Moldova, all SAUM students received the Diploma Supplement according to UNESCO-CEPES level, where all courses received a specific number of ECTS credits. Those students that obtained in total 240 credits received their Diploma Supplement. Assessment of student's knowledge and skills play an important role in conditions of credit system of Education. According to its objective SAUM had the main role in the developing of the agronomic higher education and agricultural science, in training high qualified human resources in this field and the developing of the society for European integration and economical, political and social progress.

One important step in achieving its goal is the implementation and improvement of the Quality Management System. The evaluation of students' knowledge in Moldova and in

SAUM is according to the Regulation for the organization of studies in higher education institutions based on the National System of Study Credits elaborated in 2010 by the Ministry of Education. Based on it, SAUM approved its internal Regulation for the evaluation of students' knowledge in August 2012.

SAUM Regulation is the institutional framework for the organization of student's knowledge evaluation, which aims at the systematization and improvement of the process for assessing the learning activity of students. In Moldova, students learning activity, including self activity, their skills and knowledge are verified and evaluated during each semester using current evaluations and during the examination period through final/summative evaluations according to study curriculum.

Assessing the knowledge is a part of the course unit, thus teaching activity is planned according to evaluation plans. Students are informed at the beginning of the course about the evaluation strategy applied in the specific program, methods of examination as well as about the criteria applied in the evaluation of the obtained performances. In SAUM, as in other universities of Moldova are implementing diverse forms of evaluation: current evaluation (tests, including tests on computer, projects, case studies etc.) and final evaluation (report on practice stage, exam (test), bachelor/master thesis). Student's current knowledge evaluation is compulsory on each semester. The results of evaluation are rated with marks from 1 to 10. For insuring students mobility together with national system of ratings is used the ECTS evaluation scale.

License exams are finalized with obtaining the title of licentiate. Thus, students must have knowledge and advanced competences in a field of studies, must be able to apply professionally the obtained knowledge in a field of studies, demonstrate the ability to motivate and solve problems from their field of studies, have the ability to collect, analyze and interpret the relevant data and to formulate judgments concerning relevant social, scientific or ethic problems. License exams are the final student's evaluation of the study program in a specific area. Through exams tests evaluate the level of student's knowledge and their competences achieved during the period of their studies.

The license project (thesis) evaluates the competences of students for carrying research, applying theoretical knowledge in elaborating practical solutions specific for their field of studies. In the process of elaborating the final thesis each student have a scientific supervisor. For the final exams include: one test on some basic subject of students field of study and one test on their speciality and the defence of their thesis. The thesis defence is public. Both bachelor and master students at the end of their studies have to pass final graduating exams and defend their bachelor/master thesis in front of an examination board. According to Moldova's Regulation for the organization of studies in higher education institutions here are included 5 members from University's academic staff, usually called internal commission for evaluation.

Master studies are finalized with the defense of master thesis that are evaluated according to: actuality of researched topic, the quality of scientific base, the fulfillment of research objectives, the quality/complexity of research methodology, the practical relevance of the carried study, quality of presentation and other criteria.

From the examination board takes part President, Vice-President, secretary and 3-4 members. Part from the examination board might be persons with scientific title and scientific-didactic (professors, associated professors) for the department that corresponds to the given specialization and from other institutions or well known researchers, specialists with significant experience in the area. The president of the examination board is proposed by the University and approved by the Ministry.

Using these forms of knowledge assessment, SAUM looking for its own ways to improve the process, which can serve as a model for other higher education institutions in Moldova. Thus, in order to increase the transparency of students' evaluation SAUM started to introduce the computer tests in 2010. As it was an innovative method, SAUM being so far the only university that utilizes this modality for assessing students' knowledge, in 2010 this form of evaluation was used for few subjects as it was in the period of testing. Already in 2011 for more than half of the subjects taught at SAUM students' knowledge were evaluated using this method. In 2012 all subjects were ensured with tests introduced in the computer program "STUDENT". Thus, this method was used for testing students' knowledge for both current evaluation I (30%), current evaluation II (30%) and final exam (40%). This method for the evaluation of students' knowledge is considered the most objective. Thus, similar methods of evaluation are also used in some European countries.

SAUM is the only higher education institution in Moldova that beside the internal commission also with the approval of the Ministry has created an external commission of evaluation for each accredited speciality. This external examination board included specialists from the area, specialists from the Ministry of Agriculture and Food Industry, usually former graduates from SAUM. The main aim of this commission is a more objective evaluation of students' knowledge. As well, it facilitates the employment in the labor market for graduated students, makes recommendations on better preparation of future specialists in development of modern knowledge and skills appropriate to the industry.

RATIONALE AND INTENDED RESULTS

The main aim for our University as well as for other higher education institutions is to prepare highly qualified specialists. This is impossible without having important knowledge in your field of studies. Thus, is very important the assessment of students knowledge in the most objective way. In SAUM, like many other universities, annually introducing new courses, each of which has its own characteristics that must be considered when choosing one or the other form of evaluation. In order to verify compliance with the requirements of the future specialist modern labor market also requires specific forms of student knowledge rating. Therefore SAUM introduced a series of experiments to find the best method to control the assimilation of studied material.

As a result, introduced various forms of current, intermediate and final control. Among these was the most effective forms of differentiated approach, using several different methods - testing using computer technology (as a result of which in SAUM was installed the program "STUDENT" and 2063 tests have been prepared); conventional oral, written or combined test of knowledge, the current performance of the student; involving of external experts to assess student's knowledge and skills.

Regular monitoring of the implementation of learned material through differentiated

method promotes regular and intensive work on the student's educational material, a more objective evaluation of the quality of the process, and operational development and implementation of corrective actions.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

SAUM has long experience in assessing the knowledge and skills of students. Diverse forms of monitoring the assessment of learning material were introduced in different periods of university's existence. The practice of SAUM in the last years gives a model on how the search of the most efficient forms for students knowledge assessment is influencing the study process, is straightening the relations between production and higher education, is increasing the quality of training the future specialists.

Most important objectives that must be realized in the process of systematization and improvement for assessing students knowledge in SAUM are:

- the implementation of computer technologies in teaching-learning-evaluation;
- the diversification of the used evaluation methods in order to increase of the objectivity and transparency in evaluation process;
- involvement of external experts for an assessment of student's knowledge and strengthening of links between business and the higher education;
- Ensuring the quality of education with help of internal Committees activity.

In recent years SAUM is implementing diverse forms of evaluation: current evaluation (tests, including tests on computer, projects, case studies etc) and final evaluation (report on practice stage, exam (test), bachelor/master thesis). One of the interesting methods of the student's knowledge and skills assessment used in SAUM is introduction of computer technologies. In 2011 – 2012 academic years, in SAUM for the first time in Republic of Moldova was installed the program "STUDENT" in order to avoid the subjective factor in the assessment of student knowledge and transfer 100% of the passing tests and exams on the computer.

It was an innovative method. SAUM being so far the only university in Moldova that utilizes this modality for assessing students' knowledge and skills, it took several years to put this method into practice. In 2010 this form of evaluation was used for few subjects as it was in the period of testing. Already in 2011 for more than half of the subjects taught at SAUM students' knowledge were evaluated using this method. And in 2011-2012 academic years all subjects were ensured with tests introduced in the computer program "STUDENT".

The experiment was implemented during academic year. For each subject, students have to pass two tests and one exam on the computer. After listening up to 30% of the total hours of lecture the first test is given, after listening up to 60% of total hours of lecture the second test is given, and a final exam in the end of the course. In this case, the current valuation of students that they received during seminars and workshops had no impact on the final results. They consisted of the sum of grades (with appropriate coefficients) for two tests and exam. In order to ensure the evaluation of students' knowledge in using computer technology, strict schedule of visiting computer classrooms with installed programs "STUDENT" was installed. This allowed in short time to pass large flows of students and to organize the monitoring of the experiment.

A special commission selectively inspect whether the same assessment in the examination sheet coincides with the assessment of the computer (to avoid clerical errors), the start and the end time of the examination and the identification code of the computer (to avoid cheating), Also the statistics and the quality of student learning educational material was analyzed. The experiment showed that the practice of 100% implementation of computer technology into current and final evaluation of students' knowledge has its positive side. This ensures higher degree of objectivity that allows removing the subjective factor that is present in other forms of evaluation, give transparency in the knowledge evaluation and quality of teaching.

Equal distribution of time between tests was good motivation for systematic training aimed for better preparing for the next evaluation of students knowledge and skills. Teachers were challenged to continuously improve the quality of their lecture material, in order to ensure the proper preparation of students for regular evaluation with the objective computer technology. The fact that the current evaluation did not affect the final score and the student could not prepare for the seminars, was an incentive for teachers to prepare practical seminars that would have prompted the students' interest in the discussion, to seek for original solutions.

The result of the experiment on the use of computer technology in the evaluation of student knowledge and skills was earned experience. In the 2011 – 2012 and 2012 – 2013 academic years in SAUM were developed 2063 tests for all subjects and for all specialties of the first cycle (Bachelor Degree), was improved system of lectures and practical exercises designed to prepare students for a systematic assessment of their knowledge through computer technology.

At the same time there are some weaknesses of the method, one of which was the lack of diversification in the evaluation of knowledge and one-sided focus of the educational process to prepare students for the answers to the test questions. Also the assessment of student knowledge and skills with using of computer technology is not always able to take into account the specificity of training material of some of subjects.

Another way to measure students' knowledge used in the SAUM is the use of differentiated methods: a combination of traditional approaches and computer technology in order to promote greater objectivity and transparency of the process. In the 2012 – 2013 academic years, in SAUM was decided to introduce three different types of assessment of student knowledge (multiple choice tests) within the same subject, including the average academic performance of the student; a written, oral or combine form and with the help of computer technology. An important role in improving of evaluation process of students' knowledge was the fact that the student's current valuation (marks which they receive at seminars, practical and laboratory classes during the semester) in one particular subject was taken into account. This has stepped up efforts to better preparation for practical classes and gave them a greater opportunity to develop creative beginning.

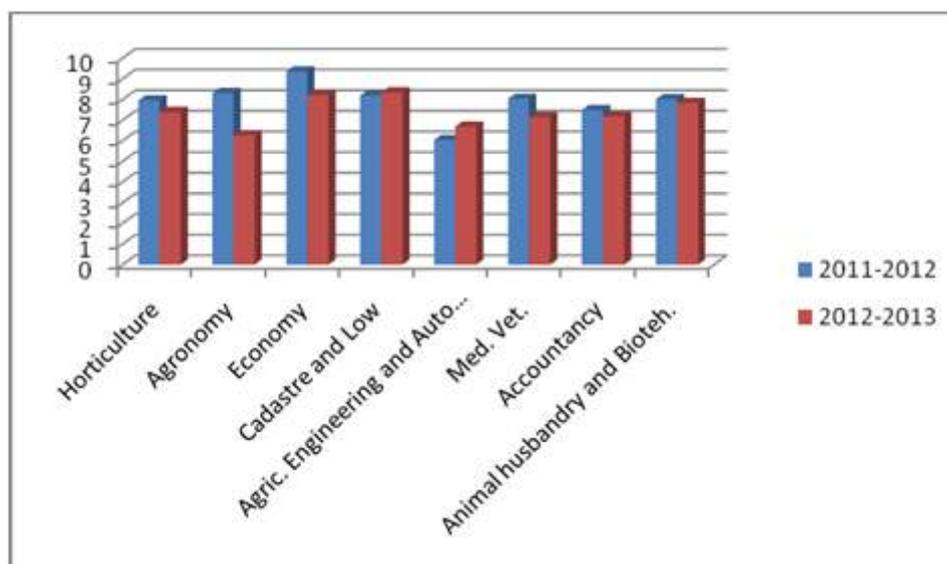
Evaluation of students is approached in the following way:

Students' current knowledge evaluation is compulsory on each semester. In this case, knowledge is evaluated from current evaluation I – 30%, current evaluation II – 30%, final exam – 40% from general mark.

In this case, one of the forms of knowledge assessment (test or exam) must occur with the use of computer technology, the other can be done on request of student and teacher either orally or in written, and the third is the GPA (average academic performance of the student in the academic discipline). Is mandatory for parity between the number of examinations and tests that must be submitted with the use of computer technology and traditional methods during the semester (50% on a computer, 50% of the orally, written or combined). As was mentioned, the results of current evaluation I and II, as well as of the final evaluation are rated with marks from 1 to 10. For insuring students mobility together with national system of ratings is used the ECTS evaluation scale.

Comparative analysis of the evaluation methods of students' knowledge used in the 2011-2012 (computer technologies) and 2012-2013 (differential methods) academic years in SAUM showed a slight discrepancy between the average score by each faculty of the University, which indicates the relative objectivity of each of these approaches.

Comparative indicators of SAUM students' performance for the 2011-2012, 2012-2013 academic years



In the 2011 – 2012 academic year the average university score was 7.42 for the first cycle of study (Bachelor Degree). During this period assessment of student knowledge and skills at the SAUM was carried out exclusively with the use of computer technology. In the 2012 – 2013 academic years, when the applied evaluation of students' knowledge conducted with the use of diversification methods, the average university score was 7.38. This once again confirms the objectivity of each of using methods.

However, according to studies, used in SAUM differentiated evaluation method of students' knowledge is more effective. It allows the use of advanced computer technology and proven traditional methods. This provides high-quality mastering of knowledge through the development of students different abilities and skills, takes into account the specificity of the educational material of various educational disciplines. The result is - preparing competent graduates.

Another interesting students' knowledge evaluation method in the SAUM is the use of external experts. SAUM is the only higher education institution in Moldova that beside the internal commission also with the approval of the Ministry has created an external commission of evaluation for each accredited speciality. This external examination board included specialists from the area, specialists from the Ministry of Agriculture and Food Industry, usually former graduates from SAUM. Regulation on the work of the committee of external evaluation of the quality of specialists was adopted by Senate of SAUM at 24th March 2006. The main aim of this commission is a more objective evaluation of students' knowledge, proposal of measures for better training, strengthening ties between business, agriculture and higher education. As well, it facilitates the employment in the labor market for graduated students.

Members of the commission are invited to the University to participate in the evaluation theses. This form of monitoring of students' knowledge and skills allows experts not only to identify the most talented students, to offer them jobs, but also indicate teachers on existing gaps in training, to propose changes in the curriculum, provide guidance to modern requirements that apply to a young professional. Also during the academic year, members of the committee have the opportunity to evaluate the creativity of students. Experts are invited to the meetings of scientific circles, where students discuss their future course and diploma projects. It also contributes to the generation of new ideas for future projects, generates the students' interest in the chosen field, and orients the faculties on the right vector of development in the training of highly qualified specialists for the sphere of agriculture.

Active part in the process of evaluation of students' knowledge and abilities make internal Committees, which were created in 2004 as part of the improvement of the Quality Management System Process. The main aim of internal Committees is ensuring the quality of education at the level of speciality, faculty and University. All together analyze and offer solutions and decisions according to the university's Quality Management System. The Internal Committee for Ensuring the Quality has 11 members and is leaded by the rector. Among members, 8 are academic staff with significant contribution in both scientific and teaching activity and 3 bachelor or master students with stunning academic results. The committee members are proposed by the University's Senate and named through the Rector's order.

Among the tasks of the University's committee for ensuring the quality is: to elaborate plans for 5 years and one year plan concerning the measures for improving quality and training; to apply the plans for ensuring the quality approved by the Senate; to elaborate at every 5 years comparative analysis of the quality in university with other universities from the country, as well as from abroad, proposing at the end measures for improving the existing situation; to elaborate own data base and information concerning the quality of the offered educational services; to create an internal and external evaluation system of the education quality etc.

At the level of faculty, the Scientific Council names the Committee for ensuring quality, lead by the Dean, with 7 members from which are 2 students with outstanding results. Among its tasks are: to elaborate annual plans concerning the measures for improving quality; to apply the plans for ensuring the quality approved by the Faculty Council etc. For each speciality, by

the council of the Faculties is named a quality committee lead by a coordinator of the speciality, which includes 5 members, among which 2 students. Students are involved in the insurance of the quality services from University in two ways: at the end or beginning of each semester is organized a detailed analysis of the studies results, causes that lead to such results and measures for improving the given situation. As well, are organized questionnaires for investigating students' opinions concerning the quality of the educational services by faculty (speciality). The answers to these questionnaires are anonymous and the results of this investigation are public.

The evaluation of quality services in SAUM is fulfilled with the evaluation on university's management of quality, which is based on the auto evaluation report and external evaluation. The committee for external evaluation and quality training has as aim to advice the management of SAUM and its faculties concerning the specialists training through monitoring the teaching activity on the given speciality. Its proposals are not compulsory without the decisions of the Senate, Council of Faculty, Rector's order etc. Members of the committee are specialists with wide work experience in the given field; managers of enterprises, specialists from the Ministry of Agriculture and Food Industry and other organizations. The given committee is organized for each speciality from 5 members: President, Vice-President, secretary and members. The Vice President is the Dean of the Faculty, President and secretary are elected by the committee members.

The committee members, except the Dean, are proposed by the Section of Science from the Ministry of Agriculture and Food Industry, the Administration Council of SAUM and by the committee itself. At the end the composition of the committee is approved by the Ministry of Agriculture and Food Industry (MAFI). The committee members must inform the Faculty Council and the Dean concerning the requirements for preparing specialists on the given field; to propose measures for improving the training of specialists on the given speciality etc.

The work of the above mentioned committees played an important role in the assessment of students' knowledge and skills; in preparation for faculties' accreditation; in the extension of job finding opportunities for University's graduates; in the preparation of curricula and study programs. Therefore, the experience of SAUM in assessing the knowledge and skills of students might be a model for other universities and will allow them to reveal the efficiency, advantages and disadvantages of one or another form of control in relation to the credit system of education.

The experiment that takes place in SAUM during the 2011 – 2012 and 2012 – 2013 years, leads to the conclusion that the differential method of monitoring on the quality of students learning material is one of the most efficient, because it ensures the development of various skills and competences and provides a higher objectivity. Only in this case is possible to ensure the quality in training of higher qualified specialist that will meet the requirements of the modern labor market.

RESOURCES REQUIRED AND USED

In the process of assessment the students knowledge in SAUM was needed both financial and human resources. For computer evaluation of students' knowledge were needed to be

open new classrooms equipped with a larger number of computers in all faculties. As well was created the program "STUDENT" that was introduced in University's network. In this way every student after classes could go to university's computer centers and to prepare for the tests/exams with access to the Program "STUDENT".

This program contains multiple answer tests for all faculties and specialities in SAUM. As well in implementing the practice of computer evaluation were involved a large number of University's personnel, including all academic staff that had to elaborate a certain number of questions for the subject taught according to the number of academic hours for the given course. Nowadays all specialties for Bachelor Degree level are ensured with tests, introduced in the University's network and available to use. For the external evaluation committee as well were made efforts in finding the key persons that will take part of that commission as well as the coordination with the Ministry.

FACILITATING FACTORS

Among the factors that contributed to the implementation of students knowledge evaluation in SAUM could be mentioned availability of material and technical base (1,200 computers designed for assessment the students' knowledge), a good collaboration between all levels of personnel, including academic staff, chiefs of departments, deans of faculties, computer centre personnel and administration. For the external evaluation committee would be a close collaboration with professors from other institution, specialists and high professionals in various fields, other experts and University in general, faculties and departments.

CHALLENGES AND OBSTACLES

In general, all the process of implementing the new practice in evaluation of students knowledge was good, but in the same time at the beginning was experienced some difficulties. Some teachers objected the testing system, considering it not perfect. For computer tests were needed high efforts from all university's staff and well as a proper monitoring. From the very beginning not all courses were ensured with tests, thus the examination using the Program "STUDENT" were applied only to a part of the courses taught.

Later this practice were applied to more courses, thus nowadays all courses taught at SAUM have the tests available for use in University's network. A busy schedule for the professionals in production and the lack of material motivation for external experts makes it difficult to attract them for participating in the works of the committee for external evaluation for assessing students' knowledge and skills.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

SAUM is the only University in Moldova that had introduced the evaluation of students knowledge based on computer test and had introduced the external evaluation committee. This practice is new in Moldova and has as major goal to increase the objectivity in the assessment of students' skills and knowledge and as result to prepare high qualified specialists for our country's agricultural sector.

SUSTAINABILITY OF THE GOOD PRACTICE

This way of assessment students' knowledge and skills implemented in SAUM is new for

Moldova and in the first year was only as testing period. The results of such a practice were good and thus were fully implemented as compulsory for students' evaluation. Nowadays are experienced also other methods for students' knowledge evaluation as mixed evaluation which involves current test I (0.3), current test II (0.3) and final test (0.4). From them first current test or final test, at the decision of department and faculty are compulsory evaluated on computer.

For bachelor degree, during the years 2010-2013 SAUM academic staff prepared 2063 set of tests for computer testing, on each course and each specialty. The accumulated material is used and will be used by teachers for one of the current tests. Nowadays, at the request of students and teachers are elaborated tests for the master degree students. SAUM master students already pass the exams utilizing the computer technologies on 12 courses, which confirm the sustainability of the SAUM practice.

TRANSFERABILITY OF THE GOOD PRACTICE

The given practice of the assessment of students' knowledge and skills that was introduced by SAUM can be used as well successfully by other university's in Moldova or abroad. The key points for computer testing would be to elaborate the program, to approve the grading scale, respect deadlines for preparation of tests, introduce the tests in the network, and inform students about the new way of evaluation.

For the external evaluation committee most important key points are: to establish contact with the particular professors, specialists in the field proposed by each department, to approve the list of examination boards by the Faculty's council and University's Administration and in the final to coordinate with the Ministry.

LESSONS LEARNT AND RECOMMENDATIONS

As a whole, the introduced system of students knowledge and skills evaluation is considered good because it allows a more objective appreciation and at the end better prepared specialists in the particular field. The system used by SAUM could be easily transferred to other institutions that will allow obtaining better results in the preparation of high qualified specialists. As well, such a system (the computer test system) could be applied in the system of distance learning.

SAUM practice in the field of assessing the students skills and knowledge can serve as model for other universities and allows to offer the following recommendations:

- to carry out a regular monitoring of knowledge assessment, that contributes to the systematic preparation of students to lectures;
- to involve computer technologies as one way of monitoring with the aim to achieve a maximal objectivity of the students appreciation;
- to use differential methods for assessing knowledge and skills, which will allow to consider the particularities of the study course and to develop different skills and competences of students;
- to involve external experts in the appreciation of students knowledge, that based on their own experience can indicate to the existing gaps in the students training and thus to improve its quality.

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9. Outdated Curricula and Teaching and Delivery Methods and its Conformability with the Contemporary Labour Market Needs

Armenian National Agrarian University, Armenia

EXECUTIVE SUMMARY

In the interest of good practice, we will introduce an agri-business academic program (curriculum) in the department of Agri-business Teaching Centre of the Armenian National Agrarian university. We denote that a well-planned academic program alone isn't enough for us to have good results. It is necessary to deliver the anticipated material through the proper methodology so that real outcomes can be formulated for the graduates regarding their knowledge, abilities and skills. Comparing the two parallel teaching processes (Armenian and English languages) carried out by the same academic program we designate that the outcomes received from the English language teaching process are incomparably better than those of the Armenian language teaching process which is first of all related to the different teaching methods used by the lecturers, and to the resource base and practices.

To solve this problem the university should first find other extra financial resources. The university is doing its best to find it. Having such an example of the best practice, the academic program of wine-making technology is being reviewed and attempts are being carried out to establish the wine school, which will be like ATC in its format.

BACKGROUND INFORMATION

Armenian State Agrarian University was modified in 1994 as Armenian Agricultural Academy as a result of the unification of the Armenian Agricultural and Yerevan Zoo – Veterinarian Institutes which had played an exclusive role in the improvement of the state agrarian sphere. They were also integral to the production of qualified specialists for the different countries of the former Soviet Union and the implementation of the various scientific researches since their foundation (1930).

The Agrarian University prepares personnel with three-level higher education in 37 specialities, which enables integration with the international education system. Considering the characteristic traits of the agrarian education system and the importance of the achievements of practical knowledge and skills of future specialists, the government of Republic of Armenia has stated learning duration of the bachelor system up to 4 years and 8 months for all professions of the agrarian university. The approach is somehow different concerning internship, externship and pre-graduation practice: as compared with other higher education institutions they are more long-lasting and saturated.

In the last years a training has been carried out in the university in the specialities of 'Agribusiness and Marketing', 'Agrarian Policy and Regional Development', 'Consultation and Information of Agrifood System' which are unique not only in our region but also in the agrarian universities of CIS member countries.

The number of the full-time learning students is nearly 4400, in the part-time learning

system there are 5800 students and 157 students are in the college. There are 450 students in all professions of the university studying in the first and second year of the graduate school. The number of post graduate students of the full-time and part-time learning system makes 240 out of which 200 students are from the Islamic Republic of Iran and 40 students are from Syria. Standards and the appropriate curricula and plans have been worked out for all professions, which have been introduced in the educational system since 2004-2005.

The structural subdivisions of the university include the academic sector with 7 faculties (faculty of Agronomy, Foodstuff Technologies, Veterinary Medicine and Sanitary Expertize, Agriculture Mechanization and Automobile Transportation, Hydro Melioration, Land Jenure and Land Cadastre, Economics and Agribusiness and Marketing), with distance and agribusiness teaching departments, agricultural college and Lyceum and with Vanadzor, Stepanakert and Sisian branches.

The structural subdivisions of the scientific centre include the departments of Agriculture Mechanization, Electrification and Automobile Transportation, Foodstuff Technologies, research institutes of Food safety and Biotechnology, the problem laboratories of Pesticides, Plants Genofond and selection, Ecology and Organic Agriculture, Melioration, Water Resources Management, Land Management and Agriculture, Veterinary and Sanitary Expertise, Feeding of Agricultural animals, Genetics, departments of post-graduate and master's study department, Publishing-editorial department and the licensing and standardization centre.

ASAU ensures its reputation among the national and international academic systems thanks to the highly qualified faculty and staff (637 professors, 60 have doctor's degree, 310 have PH.D.).

There are 5 vocational councils awarding doctor's degree: Mechanization of agricultural production and Machinery, Agronomy, Veterinary Medicine and Animal Husbandry, Foodstuff Technology and Economics. In the mentioned councils doctor's degree and PH.D. are awarded in 17 agrarian professions.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Outdated curricula and teaching and delivery methods

THE WIDER CONTEXT

After joining the Bologna process, i.e. since 2005, the government of the Republic of Armenia and higher education institutions have founded a new stage of educational reforms. Yet by 2003, the Ministry of Science and Education of the republic of Armenia had already developed the strategy of the reforms of higher education, as a result of which, in 2005 Armenia joined the Bologna process. After working out the strategic plan of the educational development of 2008-2012, the institutions of higher education started to implement various reformations, including the three-step educational system (bachelor, master's degree and research PhD), diploma supplement of peer acknowledgment in the area of the European higher education systems and the European Credit Transfer and Accumulation System (ECTS). The implementation plan of the further reforms of professional education

quality assurance has been also founded recently. The government has also adopted the National Education Qualifications Framework in 2011.

However it is noteworthy that Armenia as a former country of the Soviet Union has been in the process of fundamental changes for more than 20 years. Though agriculture in the Republic of Armenia is considered to be a priority after the collapse of the Soviet union, privatization of the lands and agricultural techniques took place, and as a result of which, the lands appeared at the disposal of poor peasants having elementary knowledge of soil elaboration. So abrupt economic changes started to directly influence all spheres of the country. The educational system wasn't an exception. For instance, our university as an institution preparing specialists in agri-food system confronts multiple problems existing in economy, partially in agriculture and food industry. During the Soviet period, food processing companies with huge capacities were operating in the system, with the Armenian-produced brandies, wines, canned fruits and vegetables and fruit juices enjoying a very high demand.

Following 1991, during the first phase of the agrarian reform, when Armenia was in the state of economic blockade, processing enterprises almost ceased their activities. In those years, family size processing operations started to grow, since the volumes and prices of raw product supplies had decreased, and the farmers had no other choice but to process their product on their own in homestead conditions just to avoid spoilage of the product. Starting from 1998, through investments from the private sector and supported by international agencies, the situation in the agri-processing industry was remarkably improved.

Activation of operations in the food processing system and comparative increase in the volume of export have definitely contributed to the mitigation of the agricultural product marketing problem and enhancement of the level of commercialization of farms. In 2007, the processing companies purchased about 144,000 tons of grape and 72,000 tons of vegetables; these volumes exceeded those of 1998 by 3.5 and 5.5 times respectively. As a consequence of the 2008-2009 worldwide financial and economic crisis, the volumes of agricultural product purchase have been noticeably reduced (Avetisyan 2010).

In the Soviet period, the produce of the processing industry in Armenia - brandy, wine, tomato paste, canned fruits and vegetables - was mainly marketed in the Soviet Union. Today, the geography of the consumer market has been considerably expanded. To develop this tendency, pronounced efforts are being made to improve the quality and marketability of the products as well as standardization and certification. However, food-processing capacities are not sufficient to process the total potential of farm production in Armenia. Hence, making further investments in this profitable industry, along with development of small and medium size enterprises are the most critical priorities.

A serious barrier for the development of our university, as well as other institutions, was the acquisition of autonomy of higher education institutions, since on the one hand, the university administration wasn't ready yet and didn't have adequate skills, on the other hand, despite the fact that the autonomy was factually given, it was unreal for there were different laws which were controversial in the Republic of the Armenia. The autonomy of universities is stated in details upon the 28 decree about education adopted on April 14th ,

1999 and upon the 6th and 15th decree of higher education and post graduate education, adopted on 14th December, 2004. However as it is mentioned in the world bank report of “Solutions of the managerial problems in the centre of the reforms of the Armenian higher education” which was accomplished by the educational team of the world bank with the supervision of SachikoKatarka, the above mentioned 2 decrees of Republic Of Armenia anticipate institutional autonomy for the universities, however other controversial laws allow the Ministry of Science and Education to interfere in their affairs.¹”

The analyses identify the fact that though autonomy has been awarded to the universities of the Republic of Armenia since 2002, having been transformed into non-profit state organizations from the state educational institutions, they began to be subjected to the laws concerning non-profit organizations adopted in 2001, which contradicts the laws concerning education and negates autonomy and the principles of self-management. In the mentioned laws, the most controversial one is that according to the laws about education, the universities are separate legal entities and neither the ministry of education nor the founder (the government) can hinder their autonomy, while according to the law about the non-profit organizations, the founder can make any final decision concerning the activities and the management of the non-profit organization. (part 1, article 13)²”:

The law of 2001 about the state governmental bodies sets the main activity frameworks of almost all state bodies, including the state universities, and authorizes the government as a founder of state higher education institutions to make any decision within the framework of state higher education institutions. So this law also contradicts the laws about education as well as the changes of the constitution approved in 2005. The same contradictions can also be found in the statute of the ministry of education adopted in 2002, according to which, the state higher education institutions are under the subjection of the ministry of science and education.³

So it is noteworthy that not only achievements are registered in the reforms, but also gaps. Achievement can be considered the fact that the availability of education and admission systems has increased, but yet the educational conditions, methods and mechanisms haven't improved thoroughly, which will promote the assurance of the students' professional skills. Nowadays the state higher education institutions don't almost get state financing and great amount of sums are needed for the development of educational-technical base, which our university lacks today. There is still the joint educational curricula workload, which first of all make the credit transfer and accumulation system senseless, and interfere with the students' mobility. Moreover it contradicts student-centred learning system.

After the establishment of the quality assurance system, the ministry of science and education of the Republic of Armenia made a decision that the institutional accreditation is mandatory and the curricular one is on voluntary basis, but there is a term that only the accredited specialties will have opportunities of state financing. So, after the insertion of the

¹ “Solutions of the managerial problems in the center of the reforms of the Armenian higher education” world bank, 2013p. p. 35:

² “Solutions of the managerial problems in the center of the reforms of the Armenian higher education” world bank, 2013p. p. 35:

idea of the curricular accreditation process, the universities gave a great importance to the academic programs and their patterns. Up to now, generally the state standard approved and developed for a separate specialty has served as a background for universities.

Though the academic programs have been reviewed in the last 10 years in universities as well as in the Armenian National Agrarian University, the compatibility of educational process with the needs of Bologna process, investment of credit and module systems, educational reforms, the urgency of education quality development, as well as the ever-changing social conditions, which raise new demands in the labour market, have been the main background for those programs.

The development and investment of the new pattern of academic programs is considered to be a new process in the Armenian National Agrarian University, though in this study we'll denote that our university has had a successful experience of the academic program review, which is also a good base for the review and development of the whole university academic programs. The above-mentioned activities have had a direct impact on our university. The mechanism of automation hasn't been realized yet, the reason for which was that the university was a non-profit organization, which is why in 2012 the Armenian National Agrarian university was changed into the Armenian National Agrarian university foundation in order to overcome the contradictions.

As for the faculty, staff and students, it is worth mentioning that a considerable part of the changes are carried out in the structural context. That is why the process isn't clear to the stakeholders of the educational process and moreover it causes a continuous inconvenience. Factually they have a very passive participation in those changes. But today the centre of quality assurance of the university tries to involve the students and the faculty in the reforms and they together decide how the curricula of the academic programs should look, and try to receive responses from the students and the lecturers as well as from employers. However there isn't a complete atmosphere of freedom yet in the educational process, as the stakeholders of the educational process aren't conscious of the new approaches of education. They continually try to implement the methodology of the old system, which contradicts to the goals which they have set.

RATIONALE AND INTENDED RESULTS

To answer this question we choose the principle of exception. The problem is that our university can't observe good practice in any other sphere involved in this folder and moreover, it can't offer it to other universities as a best practice. Unfortunately we must mention that we haven't got any best models or results in any sphere yet, all processes are still in the development process. The university is in a constant development phase, which is directly related to the Armenian reality presented in the wider context.

The only sphere which goes along with the issue of outdated curricula and teaching and delivery methods is the subject of the irrelevance of graduates' skills to labour market needs. As we'll see in the presentation of our practice, it lay on the basis of the academic program establishment, its delivery methods and the formation of the adequate skills and knowledge of the students from the very beginning.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

After the achievement of independence in 1991, Armenia's higher educational system faced several important challenges. As the country's economical and social infrastructure was changing, privatization of land and other production means was undertaken. There was an urgent demand to revise higher education curricula by including new specialties required for the needs of a market economy and excluding old, non-marketable specializations. In early transition years, many agricultural universities of post-socialist countries started reorganization. Armenia also followed the other former Soviet republics and started to implement reforms in the agricultural higher educational system. Initially these reforms were based on the best considerations of higher education faculty and administration and in consultation with international specialists in curriculum development.

Several U.S and European agribusiness curricula were examined and served as the model for these evolving educational programs for managers of agribusiness firms. The newly created Armenian Agricultural Academy (AAA) now Armenian National Agrarian University (ANAU), designed a new curriculum, preparing agricultural specialists with a three-step education system: baccalaureate, graduate and post graduate programs. New specializations were introduced to adjust to the new environment. Additional new specialties are being considered in order to further adapt education to the current needs of the agri-food system of Armenia.

However, overall, the changes in agricultural higher education in Armenia are occurring very slowly. Curriculum changes are always difficult and painstakingly slow. In fact, in the US, agricultural economists spent nearly three decades integrating agribusiness into their curricula (Erven 1987). In addition to this general slowness for curriculum change, Armenia has also undergone dramatic change in their economic structure since 1991. In general, designing and changing of the curriculum in Armenia is being accomplished in isolation by academics only and there is a wide curricular bias caused by existing faculty expertise and interests. US agribusiness industry representatives have had occasional direct input into the development of agribusiness curriculum (Coffey 1987), but agribusiness curriculum specialists have regularly sought their opinion through several surveys and analysis (Litzenberg and Schneider 1987; Boland and Akridge 2004). Most current academics in Armenia were trained during the period of centrally controlled and planned educational systems. The programs are mostly collections of courses and the existing teaching methods and materials do not foster critical thinking or communication skills. One problem appears to be that curriculum is being developed and revised by academics with no industry input. It is quite possible the agribusiness firms are changing more quickly in Armenia than academic administration has even considered.

It is widely recognized that academia should prepare students for the job market as well as provide general education (Wachenheim and Lesch 2002). An important aspect of agribusiness education is that industry leaders expect graduates to have several skills that improve the management capacity of the firm. This responsibility means that curriculum development and implementation must not be conducted by academicians in isolation. Industry must participate and play an active role in curriculum design and curricular reforms if graduates are to have the capabilities to manage the agribusiness firms in the changed environment. Academics must have unique qualities to understand on-the-job tasks,

behaviors, skills and competencies that should describe a new graduate who would be well suited for employment in an agribusiness firm. These skills and competencies necessary to be successful in their chosen career must be translated to the academic curricula in agribusiness.

The agribusiness industry is the driving force in the overall development of agriculture in Armenia. The best practice which could meet in this or that way the needs of the curricula improvement and market compatibility has been the process of establishing the agribusiness Teaching Centre formerly as a part of the additional learning process.

The Agribusiness Teaching Center (ATC) was established in August 2000 with an agreement between the Armenian Agricultural Academy (AAA), Texas A&M University (<http://www.tamu.edu/>) and USDA-MAP. The first group of twenty-eight Armenian Agricultural Academy (AAA) students was selected for the first year to study at the ATC. Thirty juniors joined the next year, among them the first two students from the Republic of Georgia. The first U.S university professors sent to Armenia to teach and advise at the ATC were: Dr. Daniel Dunn, ATC Director and Country Coordinator; Dr. John Nichols – P. I., program management and strategy; Dr. Tim Schilling; Dr. Carl Shafer; Dr. Emerson Babb; Dr. BishuChatterjee; Dr. Barry Carr; Dr. Verne House; Mr. Jack Cocks. Later, Rosemary Veneziale, and Andrew Matestic joined. Dr. Daniel Dunn started his activities in Armenia on October 26, 1999 as the Agribusiness Teaching Center Manager. Dr. Dunn did much for establishment and approval by the Armenian Agricultural Academy of an agribusiness curriculum, recruitment of students and faculty. In addition to his everyday professional management of the program, he taught financial management classes and monitored an English language summer program. Dr. Dunn developed relationship between the Georgian State Agrarian University and the AAA, which resulted in making the ATC a regional modern agribusiness school. Dr. John Nichols at Texas A&M University worked closely with Dr. Dunn in selecting and getting new graduate students enrolled in U.S. universities. Dr. Nichols played a key role in assisting Dr. Dunn and the faculty to develop strategy, plan and make decisions on the primary education, maintain excellent cooperative relationships with the Armenian State Agrarian University, as well as develop regional cooperation program with agricultural universities in the Republic of Georgia.

Academic Program Review of the ATC by Dr. Kerry Litzenberg, Team Leader, Texas A&M University, Dr. Tony Dunne, University of Queensland, Dr. Chris Peterson, Michigan State University, and Dr. Allen Wysocki, University of Florida took place in May 2011. The Review Team conducted individual stakeholder interviews. The overall assessment of the Team was that the ATC has a unique and extraordinary agribusiness education program that serves the needs of many stakeholders in Armenia with a Western-based academic program. According to the Team, the USDA funding, Texas A&M administrative and curriculum support, Director Vardan Urutyan, and the dedicated faculty have been critical factors in ensuring the success of the agribusiness education program.

A total of 100 executives from 80 quite diverse companies were interviewed and the survey instrument completed. The respondents were grouped into seven categories by firm type with the number of responding firms for each category following the category in brackets:

Urutyán and Litzenberg / International Food and Agribusiness Management Review / Volume 13, Issue 3, 2010

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- (1) Wineries and Brandy Factories [10]
- (2) Meat and Dairy Processing [19]
- (3) Fruit and Vegetable processing [15]
- (4) Other agricultural processing [16]
- (9) Food Wholesaler/Retailer [9]
- (10) Agricultural Banks and Credit Organizations [10]
- (13) "Other" category [20]

So throughout its main stages the International Center for Agribusiness Research and Education (ICARE) Foundation has been an Armenian non-governmental and non-commercial organization established in Yerevan, Armenia in April 2005 by Texas A&M University to administer the Agribusiness Teaching Center (ATC) operating within the Armenian State Agrarian University (ASAU) since 2000 as well as the three other components: the Career Development and Counseling Center, Research and Outreach Development Center, and the Center for Excellence in Teaching and Learning.

The Agribusiness Teaching Center (ATC). The ATC provides agribusiness education to achieve sustainable entrepreneurial activities in the food and agriculture sector in Armenia and Georgia. It prepares agribusiness specialists armed with broad economic, marketing, and managerial skills, up-to-date communication abilities and a good knowledge of English. These skills make the ATC graduates competitive in the growing regional agribusiness sector. The curriculum is western-structured, based on the undergraduate agricultural economics and graduate (MAB) curriculum of Texas A&M University. Courses are taught in English by American and Armenian instructors.

The Career Development and Counseling Center (CDCC). The CDCC has been established to develop and implement a sustained mechanism that allows students and graduates of ATC and the Armenian State Agrarian University (ASAU) to effectively identify job opportunities and obtain employment. The main activities of the CDCC include development and periodic update of the database of students, graduates and business companies throughout Armenia; organization of seminars and workshops on resume and cover letter writing, interview techniques, labour rights, and leadership development skills; and other assistance as needed.

The Research and Outreach Development Centre (RODC). The RODC solicits and conducts research on relevant agribusiness topics and promotes research on Armenian agribusinesses at national and international meetings. The Centre conducts research and rural development projects funded by USDA, US Embassy in Armenia, USAID through DAI, FAO, World Bank, Swiss National Science Foundation, World Vision, and many others. The RODC also organizes field trips, study tours and student internships, plans regional and international seminars and conferences, and assists with summer schools, student exchange programs and student enrichment activities.

The Center of Excellence in Teaching and Learning (CETL). The CETL has been established on the basis of the Higher Agricultural Education Reforms project (collaborative project between USDA FAS, Texas A&M and ICARE aimed at building the capacity of the ASAU to be able to meet the standards set forth by the Bologna Declaration). The CETL provides training and supporting resources to existing and future faculty of ASAU and regional universities to facilitate excellent teaching for helping to improve student learning inside and outside the classroom. The CETL aims at fostering connections among university teachers throughout the region, across program and disciplinary boundaries, and even in the broader community. Through a set of tools, instructional resources and materials, the CETL provides professional development, support for course design and improvement, and opportunities for scholarly inquiry into learning and teaching.

From the standpoint of agrarian reform intensification and efficient management, as well as the sustainable development of the agribusiness industry, it is critical to supply the sector with relevant high quality specialists. The Armenian State Agrarian University (ASAU) is the only higher educational institution providing the agri-food sector with university-degree specialists. Today's food and agriculture sector job market demands new specialties that are now included in the curriculum of ASAU: Agricultural Ecology; Children's and Functional Food Technologies; Expert Examination of Agricultural Raw Product and Foodstuff; Standardization and Certification; Insurance Business, Consultancy and Information in Agri-Food System; and others.

The Ministry of Education and Science of Armenia establishes the framework for higher education (degrees awarded, requirements for admission, fees, etc.) and the universities more or less have freedom for designing curricula and developing courses for each specialization. This allows a particular university to dynamically respond to arising needs if they have the necessary potential and resources. However, many barriers to improvement exist in Armenian universities in particular in the ASAU. Some teachers do not accept the need for improvement in their own teaching. They think that they are already doing a good job in the classroom. This perception reduces their interest in teaching improvement programs. Other barriers include the lack of creativity and drive for improvement, lack of faculty with innovative approaches and new ideas.

Most teachers are unaware of the professional literature in teaching and learning, fresh pedagogical techniques and technological advances; they do not tend to update the resources they use. The current student-centered classroom experience used in other educational systems is virtually unknown in Armenia. The teachers themselves are the main speakers during their classes. Students' input in class discussions and development is absent.

Problems also exist in course and curriculum development. Courses usually lack clear objectives and are not output-oriented. Teachers do not create the best course syllabi, evermore they do not clearly understand the essence of syllabi, they misinterpret it as a mere thematic plan for their lecturing. It is difficult for teachers to move to the new grading system. Students lack knowledge about their progress, and how to improve it. Teachers are also unable to motivate students

There is a poor feedback from the industry to improve the curricula and maintain it with

current needs of the market. No or poor mechanisms of curriculum evaluation exists. Either curricula remain the same or the revisions are done without the involvement of the industry. This background on the historical and current status of agribusiness education in Armenia makes a clear case for the motivation for the study reported in this research effort.

RESOURCES REQUIRED AND USED

USDA was the main financial resource in the establishment of ATC and it still contributes to the structure as it is unable to operate on the basis of the students' fees, which would be very little for the complete organizational processes of the centre in its multiple aspects especially if we should take into account that the most part of the faculty comes from abroad. Depending on the strategies and plans which the centre has determined for itself, the amount of investments has changed. As for the former required amount, we can't give accurate data as this practice was accomplished within the framework of grant programs. Moreover, the establishment took place through one grant program and the implementation part was fulfilled through another one. Academic Program Review of the ATC by Dr. Kerry Litzenberg, Team Leader, Texas A&M University, Dr. Tony Dunne, University of Queensland, Dr. Chris Peterson, Michigan State University, and Dr. Allen Wysocki, University of Florida took place in May 2011.

The Review Team conducted individual stakeholder interviews. The overall assessment of the Team was that the ATC has a unique and extraordinary agribusiness education program that serves the needs of many stakeholders in Armenia with a Western-based academic program. According to the Team, the USDA funding, Texas A&M administrative and curriculum support, Director Vardan Urutyan, and the dedicated faculty have been critical factors in ensuring the success of the agribusiness education program. The Agribusiness Teaching Centre adheres to western education values and teaching principles. The two-year curriculum is based on the Agricultural Economics curriculum of the Texas A&M University, with a privileged opportunity to fill the growing agribusiness and related job markets in Armenia, Georgia, and elsewhere. You can also proceed to the Master of Agribusiness degree here at the ATC or pursue other graduate degrees internationally

FACILITATING FACTORS

The main facilitating factors are related to the convergence of the challenges of the outdated curricula and the opportunity of updating them in consistence with the labour market through the collaboration of the American and Armenian scientists .The financial support which was served by USDA as well as the urgency of curricula improvement in the faculty of Agribusiness and marketing were also sound facilitators to successfully implement the good practice. External adequate evaluation concerning the possibility of achieving international results in terms of compatibility of the innovative curricula and labour market and preparation of a firm background in the sphere of Armenian National Agrarian University and contributing practical measures both the Armenian side with its urgent challenges and the American side with its policy to sustain the existing potentials have served a good facilitators for the accomplishment of the good practice.

CHALLENGES AND OBSTACLES

One of the main obstacles, which the institution had to overcome was the lack of English language knowledge. On this occasion some language courses are being organized in ATC to

overcome the difficulties.

Only students of the Armenian National Agrarian University (sometimes Georgian university students) graduating the second year can enter the Agribusiness Teaching Center, besides the curricula of ATC are planned in consistent with the curricula of the faculty of Agribusiness and Marketing of the Armenian National Agrarian University. It means that there is a great discrepancy between the curricula of ATC and those of other faculties of the second year of the university. This is a kind of obstacle on its own and makes the implementation of the good practice somehow difficult and demands great power and stamina to minimize this discrepancy between the curricula of other faculties. Some teachers do not accept the need for improvement in their own teaching as they think that they are already doing a good job in the classroom. This perception reduces their interest in teaching improvement programs. Other barriers include the lack of creativity and drive for improvement and a lack of faculty with innovative approaches and new ideas.

Most teachers are unaware of the professional literature in teaching and learning, updated pedagogical techniques and technological advances; they do not tend to update the resources they use. The current student-centred classroom experience used in other educational systems is virtually unknown in Armenia. The teachers themselves are the main speakers during their classes. Students' input in class discussions and development is absent.

Problems also exist in course and curriculum development. Courses usually lack clear objectives and are not output-oriented. Teachers do not create the best course syllabi, evermore they do not clearly understand the essence of syllabi, they misinterpret it as a mere thematic plan for their lecturing. It is difficult for teachers to move to the new grading system. Students lack knowledge about their progress, and how to improve it. Teachers are also unable to motivate students.

There is a poor feedback from the industry to improve the curricula and maintain it with current needs of the market. No or poor mechanisms of curriculum evaluation exists. Either curricula remain the same or the revisions are done without the involvement of the industry.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Agri-business is considered innovative as it is the only department of the Armenian National Agrarian University that has had its curriculum established from the very start, i.e. on the basis of the studies of the skills necessary for specialists by corresponding employers. At the same time, the curricula of the Texas university have been studied, as a result of which, an educational model emanating from the needs of the Republic of Armenia reality has been produced. Moreover it is considered one of the specialties of the agri-business department of the university, but along with it, an agri-business teaching centre was established which delivers the same program in English language. Factually there are differences between the teaching methods and approaches of Armenian and English languages, which enhances the fact that there aren't the necessary conditions for the courses of such kind of teaching methods for the Armenian language department.

Attempts have been carried out to review other academic programs in ANAU with the help of benchmarking of other best programs of the same sphere, however the study on how the

graduate meets the current labour market demands in terms of his knowledge and skills hasn't been carried out yet.

SUSTAINABILITY OF THE GOOD PRACTICE

The overall goal of the current study is to establish priorities for Armenian agribusiness education curriculum through a solid partnership with the growing food and agribusiness sector of Armenia using formal surveys. These queries and explicit directives reveal the major revisions and changes needed in the ANAU's current phase of curricular reforms related to agribusiness programs. Baker G.A., Wysocki A.F., and House L.O; Baker G.A., Wysocki A. F, Wachenheim and Lesch, House L.O and Batista J.C; and Litzenberg and Dunne have all described the need and opportunities for academics partnering with industry representatives to develop curriculum. While there may be a synergistic effect between research and teaching in agribusiness (Dooley and Fulton 1999) this study is focused on curriculum. Agribusiness education must be current and meeting the needs of industry. The main objective of this study is to quantify industry preferences for agricultural higher education in Armenia, in particular agribusiness industry preferences for agribusiness education. The study identifies the skills, capabilities and experiences that the food and agribusiness companies look for in their new employees with the potential to become future leaders in their firms.

Meeting the needs of Agribusiness Curriculum Reform

Some of the skills highly rated in the top category (personal qualities) which are "high moral/ethical standard", "positive work attitude/personality/ability to work hard", etc. can be incorporated in the subjects like business ethics, leadership or management and the instructors should use such teaching methods that encourage group work, delegating responsibility, motivating students and involving them in various decision making practical cases. The communication skills category was ranked second and under this category, skills should be developed within several subjects. In this category, top three skills were: listen to and carry out instructions, express creative ideas verbally and professional telephone skills and etiquette. These skills can be taught within the subjects like negotiations or a new subject, business etiquette, can be developed.

The third category was "General Higher Education Experience". Although the highest rated two skills of this category were ranked very low in the overall skill ranking, it is obvious that industry highly values foreign internship and foreign study experiences. Students with foreign study or internship experiences have more chances to get employed sooner than those without such experiences. The agribusiness program directors should develop / provide international study or internship opportunities for their students. This is accomplished with the help of agribusiness companies, which can support some selected students to pass their internship in international agribusiness firms and upon arrival to get relevant positions in the company. The top rated experience of the category F (ranked number 5) which is "employment in international agribusiness firm" also proves that international experiences are highly valued by local firms.

Category A, Business and Economic Skills, received a number four ranking. Top five skills within this category were: marketing administration, consumer behavior analysis, professional selling techniques, risk management and financial statement analysis. It can be

concluded that agribusiness education programs teach subjects including consumer oriented marketing with an emphasis on professional selling. Other required skills in this category can be taught within the strategic management subject, monitoring and evaluation (A6. Identify, monitor and evaluate key performance areas and progress toward the objective and goals of the firm) and financial analysis type of subjects.

The highest ranked two skills of the Category B, ranked number six, were general business computer software (overall rank of 21) and accounting software (overall rank of 52). *Additional Research Needs* This research has provided the basic evaluation of the skill profile needed by the agribusiness industry for 78 skills in seven general categories for five different firm types. This study is prescriptive and built on the premise that agribusiness managers know what they need in terms of required skills of agribusiness graduates. Follow-up work is needed to develop an employability “road mapping” of these skills over time, as they apply to successful employment after a sizeable group of Armenian students are educated with these skills.

TRANSFERABILITY OF THE GOOD PRACTICE

Before offering this practice to other universities, we would like to mention that the localization of this practice in the whole university is not unanimous. The reason for this is the fact that though the academic programs of the department of Agri-Business and Marketing are in consistent with those of the Agri-business Teaching Centre, the differences in technical equipment and applied methods and approaches during the teaching process, and the superficial knowledge of the English language, contribute to significant differences among students learning by the same curricula.

We’d like to mention that in the context of academic programs review, the university has initiated an experiment for the specialty of wine-making technology to create a wine school upon the example of the ATC. Now on the same principle, an attempt is carried out to study the needs of the labour market and the academic programs of other universities. But, in this case, the academic program won’t start at the beginning, as the university does already have an academic program which is being reviewed. So there are differences in the approaches but any higher education institution has the necessity of overcoming the following difficulties while improving its academic programs:

- Academic programs forming relevant knowledge, abilities and skills that are relevant to the employees, i.e. labour market needs;
- Adequate faculty and staff having a good command of the methods through which he/she achieves the outcomes of the given subject;
- The existence of the mechanisms providing continuous feedback about the process of the current program and the mechanisms for correction of apparent shortcomings;
- Financial resources which aren’t based only on the incomes received from the students’ fees, so that the university can be independent of the students;
- Provision of contemporary resources;
- Organization of practices contributing to outcome formation.

These are the bases upon which our university has established its best practice, so that graduates of other specialties can also meet the demands of labour market. In this respect,

this receipt is the same for any Armenian university, but unfortunately it should be mentioned that overcoming each of the points mentioned above is a serious difficulty for any Armenian university.

However, from the other point of view, nowadays any higher education institution of the Republic of Armenia (Republic of Armenia) aims to internationalize, and consequently a prerequisite of having foreign students from abroad is the assurance of the study of foreign language. A very vivid example is ATC, as the same syllabus exists both in Armenian and in English languages.

So, as a good model which may contribute to university study programs, and can serve as a background for the creation of sound academic programs and their implementation, and can be considered as a best practice is definitely our ATC (Agribusiness Teaching Center), which can also be a good base for the review of other academic programs of the university. However, experience shows that serious and fundamental changes are necessary for the contribution of this practice to the universities which require long periods of time and great financial resources, which is not available for almost any higher education institution of the Armenian Republic at this time.

LESSONS LEARNT AND RECOMMENDATIONS

As we have already mentioned, the process of establishment of the academic program of the agri-business specialty has been a long one, which started in 1999. However, it started to award its complete graduate certificate only in 2003, and from 2014, the graduates will get not only the ANAU diploma but also that of Texas university. So this program, through its realization, has showed that it contains the development mechanisms. Lessons which the university has learnt is that the implementation of the academic programs of Armenian and English language should be carried out through the same methodology and principles, but this difficulty still exists, because the English language program has an extra financing means upon the USDA and the Armenian language program doesn't have such kind of opportunities. That is why the main shortcoming is considered: the university must never depend on the students and must have other financial resources apart from the students' fees. It must have adequate faculty and staff that have a good command of the methods which foster the outcomes of the given subject (they must also get proper wages, as the salaries of the lecturers of ANAU and ATC are quite different, consequently the demands are also different).

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10. Modernisation and Management of Curricula Design for the Development of Economic Education“Decision Making Technology in Practice for Social Policy Analysis”

Gori State Teaching University, Georgia

EXECUTIVE SUMMARY

In a „knowledge Society“ all students – certainly all graduates – have to be researchers. Not only are they engaged in the production of knowledge, they must also be educated to cope with the risks and uncertainties generated by the advance of science.

Elaborating and implementation of the syllabi for the new discipline „Decision Making Technology in Practice for Social Policy Analysis“ at Gori State Teaching University at the MA first course level is provided in 2012-2013 in the frame of transformation of economic education. There are discussed alternative approaches to Decision Making Teaching in economic education and compares assumption underlying action oriented approaches. Also, here is reviewed how to explore the nature of experience in undergraduate and postgraduate Decision Making teaching. It stresses the importance of productive relationship between economic education, market competitiveness and Social Policy Analysis and in result on improving the understanding the trends of educational reforms provided by the universities of Georgia.

The case study considered design and organization of curricula development of economic education in the frame of transformation of economic education according to prepare and implement new discipline „Decision Making Technology in Practice for Social Policy Analysis“ and included the next steps:

- Analysis of the current situation according to the economic education;
- Discussing an achievement for preparation students for competitive market economy;
- The idea to introduce a new discipline and change study program for achievement of the goal;
- The role and place of program software in the teaching process;
- Discussing new curricula design and teaching methodology;
- The idea regarding project preparation for the change of curricula design;
- The Expertise of the project by the experts from the University of Gdansk;
- Implementation of the discipline „Decision Making Technology in Practice for Social Policy Analysis“ at Gori State Teaching University.

Besides this, there is discussion of the role of economic education in building a workforce as economic education has become an important part of the young generation for their preparation for success in business. The main attention is focused on preparing teaching course material that contains quality improvement concepts which could be applied for providing Modern Educational Reforms. Analysis can help graduates to improve their decision making and personnel development. Also, this case study focuses on the different assumptions that are based on the starting point and taking action within each perspective

that is balanced between teaching methods and student's assessment. And at last, there is consideration of the important question: why do we have to teach the research methods and what are the expected results for Social Policy Analysis?

Keywords: educational reforms: research methods, decision, teaching, assessment, quantitative approaches, curricula design, syllabi.

BACKGROUND INFORMATION

Gori State Teaching University is a significant center for education and science in Shida Kartli. It was established as a result of merging two higher education institutions, Gori State University and Tskhinvali State University (Government Resolution #176, August 22, 2007).

The state universities of Gori and Tskhinvali have a rich history. Caucasus teaching seminary opened in Gori on 12th September of 1876, which gave many well-known teachers to our homeland. In August of 1935 it was opened as a two-year teaching institute, being afterward in 1939 re-established as Gori State Pedagogical Institute with a four-year study program. The Institute was given the name of N. Baratashvili, a great Georgian poet. In 1985, as a result of reorganization of Gori N. Baratashvili State Pedagogical Institute, it was established as Gori State Economic Institute, and renamed again in 1997 as Gori State Economic-Humanitarian Institute. On 16th July of 1999, the mentioned institution received university status.

Tskhinvali State Pedagogic Institute was established in 1932 with one faculty: agro-biologic. In the following years new faculties were added. Gradually it grew into educational, scientific and cultural center. Since its foundation the institute had assured support from Georgian scientists. After the Georgian-Ossetian conflict of 1991, Tskhinvali State Pedagogic Institute continued functioning in the city of Gori. On 16th June of 2000 Tskhinvali State Pedagogical Institute received university status.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Outdated curricula and teaching and delivery methods

THE WIDER CONTEXT

Introduction

Economic science research should lead to a better understanding of current societal developments and enable policy makers to propose solutions to problems and design policies that can serve the public more effectively. Governments are increasingly aware of the need and opportunities to improve the contribution of social science knowledge to policy making and are keen to realize this potential. Can the economic sciences act as an agent of societal change? How can they contribute to social practice? Can best practice in other research fields and economic sectors be a source of inspiration on new approaches to sharing knowledge? How can the divide between the two communities - social scientists and decision makers - be narrowed?

"The general crisis that has overtaken the modern world everywhere and in almost every sphere of life manifests itself differently in each country, involving difference areas and taking off different forms and between of them - education" No doubt, the crisis is

continuing”. [1]

In act, many public universities have been rapidly privatizing some of their programs in the sense of substituting public resources, private giving, and tuition revenues for state subsidies. This process, especially marked in areas of professional education such as law and business, has narrowed even further the difference between public and private research universities. More important, all higher universities, public or private, must constantly reevaluate whose interests are being served by their current policies and programs. Everyone's interests cannot be served at the same time.

In the changing social environment , educational systems are facing new challenges. Today it has become clearer that economic, cultural and political trends cannot be effectively dealt with by traditional standard teaching methods and academic subjects. Rethinking the educational reforms in Georgia is addressed to the problems of serious political conflict and potential social disruption, the proportion of disadvantaged students--including those in poverty. Nowadays, many papers consider this problem and more that are connected with this Educational reforms process as “... all levels of government and other constituencies must adhere to a policy agenda which includes the establishment of goals, accountability, resources, and technical assistance...” [1].

It is fact that “..., one important question to investigate is the degree to which current science education improvement discourses are the consequences of quality research into science teaching and learning, or represent national and local responses to global economic restructuring...”[2]. The situation of the Georgian universities illustrates the potential difficulties with implementing a new model of educational reforms. The analysis is directed to business and economic education and focuses on three aspects within the Georgia Universities and among of them - Gori State Teaching University, too:

- 1.Crisis over the curricula [3]
2. Crisis over the academic freedom [4]
3. Crisis over the regulation of the scope of teaching and learning [5]
4. Crisis over the integration of the teaching-learning-research by the demands of bologna process [6].

But the aim of the recent reforms is definite as faculty development, increasing QA and understanding the worldwide implications. Such problems are considered in the article [7]: “The ongoing crisis of the German university illustrates the potential difficulties with implementing the emerging global model (EGM) of the new research university in a nation where there is a long tradition of higher education”. If we consider this problem in a large sense as Harold T. Shapiro makes in his article “Higher Education and Society “[8]:” Indeed, given the increasing globalization of our social, cultural, economic, and political environment, the quality of American higher education depends not only on sustaining its heterogeneity, but also on the strength and vitality of institutions of higher education elsewhere, which have their own distinctive approaches.

The American university continues to be enriched by the flow of talent and ideas from abroad, and it increasingly depends on it, just as talent and ideas from abroad increasingly depend on us [“The health and vitality of American”]. In fact, the developed countries have

became the big laboratories which are ingesting from the third world countries. It is natural that the so called the rest world countries can not become the developed countries as education will be lacking, and as education is the basis of the economic developing, these countries will be rest on the consumer level.

Despite some significant contrasts, private and public universities have an enormous amount in common. Most important, they are members of a common educational and scholarly community. Moreover, they are quite dependent on one another and faculty, students, ideas and even academic resources. For the most part, faculty and students who move from one to the other can adapt easily because the basic nature of their work will be largely unaffected [10].

Based on the reflections of the author and experts which emerged as the outcome of a curricula development by supported of the the project - "Study module: Decision making technology in practice for social policy analysis" have implemented through the Policy, Advocacy, and Civil Society Development in Georgia (G-PAC) program of East-West Management Institute (EWMI) (grant #677-11-211-3016-20).

Under this project, the curricula has been prepared and the discipline implemented „Decision Making technology in practice for social policy analysis“ with teaching methodology and using program software for the first course of MA students [11, 12]. The underling hypothesis of study and linking teaching and research as an effective tool in achieving a new level of student understanding based on a research driven approach for preparing of competitive specialists. As I reflect on my own experience first as a senior teacher/ invited specialist/ professor of the Gori University, many obvious distinctions come to mind--their differences in size, their relative commitments to professional education. Less noticeable, but equally important and interesting, were two important distinctions relating to professional leadership.

I return to the two most critical characteristics that public and private universities share: they serve society as both a responsive servant and a thoughtful critic. Thus, although the modern higher university must serve society by providing educational and other programs in high demand, the university must also raise questions that society does not want to ask and generate new ideas that help invent the future, at times even "pushing" society toward it.

Educational context

Interrelationship transformation of education and ICT

Today ICTs are effective and integral tools in education. The peretration of ICT in education transforms pedagogy and the creation of knowledge. As a result, ICT may lead to a rethink of the skills and capacities in a knowledge society. However the main challenges, even for the most advanced systems, lies in teachers' capacities to use tchnology effectively in the classroom. Indeed, formulating a policy on ICT in transformation of education requires taking a set of variables into account such as objectives, applications and content and teacher capacities. Besides this, our attention is directed to using programme software which requires more specific knowledge.

The 21st century universities, just like the universities of all the other areas, is facing

numerous challenges at local, regional and global level. The challenges include:

- The current world economic crisis and the need to address global problems and issues;
- The need to equip students with new skills, knowledge and labor forces, information technologies which are constantly changing.
- The project is implemented in partnership with experts of the University of Gdansk. Two main considerations that curricula take into account are:
- Curricula should involve crossing borders both within and across societies. In this view such recognition leads to human and market values;
- Curricula requires a commitment to freedom, encompasses curricula development, teaching strategies and assessment processes and leads to an understanding of the intersections of local, national and global perspectives.

RATIONALE AND INTENDED RESULTS

Decision making as a basis of interdisciplinary exchange

Each individual is more likely than not to make the correct decision on their own, people are being more closed in their beliefs because there is just too much information and especially in that cases when decision making is connected with the views of public. In some countries people are spending many years to learn how to properly relate material to students, not simply make them memorize everything. We must derive a method that will keep catalytic reactions between ideologies under control. This method should include political, policy-based, and technological instruments. Then, we should align them in the right sequence so that we can apply our reasoning, not only memory.

When asking the crowd what their opinion is regarding a particular issue the answers will undoubtedly depend on the individual's personal beliefs. If the question is framed and there is a limited selection of answers, such as in polling, the individual's answer will be fitted to their personal belief. While this will allow for an analysis of what the "majority" of the crowd prefers it does not necessarily mean that majority is correct. If each of us have less than a 50% chance of being right about a decision, a group of us will be worse at making a correct decision, with our probability of accuracy increasing towards zero as the size of the group increases.

What is Decision-making technology in practice?

The context of decision-making is the dynamics of the Knowledge Economy and the Network Society. The subject mediates analytical and conceptual competencies to interpret the dynamics and to perform plausible decision-making management.

Typical topics are:

- Study and values studies;
- Decision theory;
- Organizational theory;
- Research design;
- Risk and risk management;
- Strategic management;
- Modeling;
- Decision analysis.

The subject is premised on the assumption that organizations, universities, educational institutions are the engines of society and challenging part of managing organizations is the combination of decision-making, using of knowledge technologies and the social and cultural dynamics of individual and group processes.

A focus on decision-making

One of the peculiar characteristics of the knowledge economy is that the more knowledge there is, the less there is clarity as to what general course of action is to be followed. Knowledge is the cure to all problems. This is a result of the essential characteristic of knowledge itself. Knowledge, if it is truly knowledge, is an inherently creative dynamic. As such knowledge always opens up options and creates new capacities for action. As a society becomes more knowledge intensive, and as our economy becomes ever more knowledge dependent, the inevitable outcome is an increase in options. Options mean choices and that means decisions have to be made.

Nowadays, the focus is on very complex and integrated decision-making systems. It is not a matter of individual, but rather of the organic functioning of the organization or society as a whole. The organic understanding of decision-making emerged in the 1980's and was reinforced in the 1990's in conjunction with two significant developments, as are:

- Knowledge Management;
- ICT development.

Information systems have become ubiquitous. On the one hand they create conditions to knowledge creation, but on the other hand they are the primary sources of enormous ambiguity and confusion. All of this has a massive bearing on the way organizations and societies work, how they are managed, how decisions are made.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

Implementation of the discipline DMM as a obligatory course for MA studens of MBA, Finance

Course description

DMM methods are especially helpful with large complex problems. If the manager has little experience with similar problems, or the problem is sufficiently complex, then a quantitative or qualitative analysis of the problem can be an especially important consideration in the manager's final decision. An analyst will concentrate on the quantitative or qualitative facts or data associated with the problem and develop mathematical expressions that describe the objectives, and other relationships that exist in the problem. By using one or more quantitative or qualitative methods, the analyst will make a recommendation based on the quantitative or qualitative aspects of the problem. A manager can increase decision making effectiveness by learning more about quantitative or qualitative methodology and by better understanding its contribution to the decision making process, to compare and evaluate quantitative or qualitative sources and ultimately to combine the two sources in order to make the best possible decision.

To successfully apply quantitative or qualitative analysis to decision making, the management scientist must work closely with the manager and they can begin on

developing a model to represent the problem mathematically. The best solution for the model then becomes a recommendation to the decision maker. The process of developing and solving models is the essence of the quantitative or qualitative analysis process.

The value of model-based conclusions and decisions is dependent on how well the model represents the real situation. The success of the model and approaches will depend heavily on how accurately the objective and constraints can be expressed in terms of mathematical relationships. The analyst will attempt to identify the values of the decision variables that provide the best output or optimal solution of the model. In this case the analyst can successfully implement the model and develop system for asset allocation, financial planning, social policy development, marketing information technology, database marketing, and portfolio performance measurement and so on.

An important part of the decision making analysis process is the preparation of managerial reports based on the model's solution that can be easily understood by the decision maker. If the results of the decision making process are not correctly implemented, the entire effort may be of no value. Because implementation often requires people to do things differently, it often meets with resistance. People want to know "What's wrong with the way we have been doing it?" and so on... At this stage, analyst focuses on developing solutions that provide significant value and are easily implemented. Because people with different skills, perspectives and motivations must work together for a common goal, teamwork is essential. The group's members take classes in team approaches, facilitation, and conflict resolution. They possess a broad range a multifunctional and multidisciplinary capabilities and are motivated to provide solutions that focus on the goals of the firm or organization.

DMM covers a decision making analysis, including problem formulation and structuring the decision, analysis of problem and model building involving technical details such as computing, and provides MA students with a sound conceptual understanding of the role of decision making process for management and administration.

Focus

The focus of the discipline is on the decision making process and on the role of the management in that process. There will be discussion on the problem of orientation of the process and show models can be used in this type of analysis. The difference between the model and the situation or managerial problem it represents is an important point. One of the important characteristics of management is to develop procedures for finding the best or optimal solution of the problem by using DMM. This course is for MA students wanting to improve their decision-making skills through the use of modern computer tools and techniques. They will learn how to make effective decisions relating to project schedules, product design tradeoffs, project cost estimating, problem solving, and risk analyses.

Teaching-learning methods

Active teaching- learning methods aims are the development of students potential as individuals and to make informed and responsible decisions for living and working in the 21st century as flexible, creative, and proactive young people who can solve problems, make decisions, think critically, communicate ideas effectively and work efficiently within teams and groups.

Teacher-centred classroom	Learner-centred classroom
Product-centred learning	Process-centred learning
Teacher as a 'transmitter of knowledge'	Teacher as an organiser of knowledge
Subject-specific focus	Holistic learning focus
Focus on answering questions	Asking questions
Wanting to have their own say	Actively listening to opinions of others

Teaching methods

Teaching Method	Effect of teaching method in skills development
Traditional lecture –face –to-face	Knowledge acquisition integration with students
Teamwork extra class	Cooperation, Responsibility, independence, communication skills
Teamwork during class	Cooperation, Responsibility, independence, communication skills
Class solving	Confidence, oral communication skills, written skills, interaction skills, cognitive benefits(problem solving, judgment, understanding)
Individual homework assignment	Independence, written skills, logical thought
Library research	Independence (able to recognize when information is needed and have to ability to locate and use effectively the needed information)
Individual assignment during the class	Independence, written skills, logical thought
Student seminar	Self-confidence, communication(speaking ability) skills, critical thinking, interpersonal skills
Computer based activities	Independence, using of software skills

Prerequisites

There are prerequisites for this course: calculus 1, 2; basis of statistics, basis of probability.

Grading

Total possible grade points:	Percentage of Total Possible Grade Points
A	91-100%
B	81-90%
C	71-80%
D	61-70%
Fx	51-60
Failing	<51%

Grading policy

The students get grades for:

- midterm test;
- final test;
- individual presentation;
- group presentation;
- problem solving and decision making essay.
- Incomplete grade - given to those students who are passing the course but are unable to attend more than 80% of the classes or take the final exam.

RESOURCES REQUIRED AND USED

- Library on decision making; economics; research methods in business and economics and social sciences;
- Computer class with programme software;
- Publication of DM Technology in Practice.

CHALLENGES AND OBSTACLES

Basic social policy problems such as trend of social policy practice and research has not adequately been addressed. The study's objectives were to identify, describe and analyze what social policy research and what it does and the extent to which they address social problems and identify future research priority and direction. The understanding of social policy is perceived synonymously with social welfare policy. There is a certain consensus concerning various barriers in the decision making process. These include:

- Ideological problems that constrain the formulation of reform agendas;
- Historical separation between researchers, policymakers, service providers, administrators, managers, etc.;
- Different conceptions of risk at the individual or public level;
- Media interference, which can both confuse the issue by publicizing results inappropriately;
- Circulation of research;
- The lack of research process from the decision-making process.

For many social policy makers and practitioners, the conception of social policy excludes economic development and economics. Unforeseen problems emerged. There was also the emergence problem of financing of education and teaching of decision making theory at the university level. For many social policy makers and practitioners, the conception of social policy excludes economic development and economics. Unforeseen problems emerged. There was also the emergence problem of financing of education and teaching of decision making theory at the university level. Under the project (grant #677-11-211-3016-20) is prepared the study module for the first course MA students.

“Decision making technologies in practice for social policy analysis” with four syllabi:

- Introduction in Decision Making;
- Statistics for Social science;
- Decision Making Tools and Techniques (programme software STATA);
- Decision Making Methods.

The module will be introduced at Gori Teaching University as an obligatory course.

SUSTAINABILITY OF THE GOOD PRACTICE

After the first semester in April, 2013 an “Answer-Question” meeting was held about the DM Course (Part I “Introduction course”) with the MA students of the faculty of Social sciences, business and law. After the second semester, a meeting with the same students will be held for debates.

RATIONALE AND INTENDED OUTCOMES

Student will learn:

- How to make effective individual and group decisions;
- How to get down to the true cause of typical project problems using root-cause analysis;
- How to apply spreadsheet techniques and programme software STATA to project management;
- Why the critical path may not always be the longest path;
- How to respond to imposed project completion dates which may be unrealistic;
- How to make critical project decisions under uncertain conditions;
- How to make multi-stage decisions using decision trees;
- How to use AHP and KTA models to make multi-criteria decisions;
- How to use Game Theory for Decision Making;
- How to consider DM under Risk and uncertainty;
- How to consider DM with probability and without probability;
- How to assess emerging risks;
- What is an interaction between researchers and decision-makers as an explanatory dimension conditioning the use of research results.

Skills and abilities to be developed

Skills: to be creative, to manage information, to think critically, to make decisions, to solve problems.

Abilities: to want understanding of an essence of single and multi-criteria decisions; to make effective multi-criteria decisions using conventional spreadsheets and software STATA; to make multistage decisions using decision trees; to conduct a root-cause analysis using Decision Making Tools and Techniques; to state research problem, to find the need DM tools and to find the need decision.

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11. Competitiveness on Education Market of Ukraine: Challenges for Lviv Academy of Commerce

Lviv Academy of Commerce, Ukraine

EXECUTIVE SUMMARY

The experience of Lviv Academy of Commerce (LAC) in signing contracts with European higher educational institutions and their realization in getting double diplomas is analyzed, which is caused by the modern tendencies on the education market. Increasing competitiveness on the market correlates with limits of its widening, decreased growth of the entering students, increased number of HEIs, and willingness of getting education degrees abroad. The programme of getting a double diploma with the University of D'Auvergne - Clermont¹ was established within the project TEMPUS "Modernisation and development of professionalized disciplines (MODEP) 144920-TEMPUS-2008-FR-JPCR" and included introduction of general professional courses LICENCE (L3) – the equivalent of Bachelor's and Master's diplomas (M1 i M2) in the sphere of management, adapted to the needs of professional education in the universities of Ukraine, Belarus, Moldova and Morocco, according to the Bologna process, and getting double diplomas (in Ukrainian and French).

Regarding existing preconditions (including having double terms apparatus, similar with European, competencies of the faculty and the students in the sphere of foreign languages; orientation to international integration and the Bologna process, contacts with foreign HEIs, the following results were achieved: unification of education programmes of HEIs; joint studies and training highly qualified personal; introduction of new information technologies into education process; and getting European diplomas by the students of LAC.

In the process of the project's realization there were several different cycles of studying process in Ukraine and Europe, few French-speaking students, and separate differences in the requirements towards organization of the education process. The results of the introduction of the programme of getting double diplomas show that it is one of the most effective means in improving attraction of getting education degree in the LAC and strengthening competitiveness advantages of the HEI on the education market.

BACKGROUND INFORMATION

LAC is an educational institution of IV accreditation level with about 200-year history (established in 1817). The work of the institution is aimed at improvement of higher education, establishing modern system of methodological and information providing of consumer cooperation, moving to the dynamic system of specialists' preparation. There are about 455 lecturers, including 5 academics, 28 doctors of sciences and professors, 210 candidates of sciences and associate professors, more than 8000 students at the Academy. Academy has five educational buildings, a library with more than 500,000 titles, four student hostels, and computer center with laboratories.

There are 3 institutes and 5 faculties in LAC, which train bachelors, specialists and magistrates

in the specialities:

- Institute of Finance and Economy
- Management faculty (Economic Cybernetics; Enterprise Management)
- Law faculty
- Faculty of International Economic Relations
- Faculty of Commodity Science and Commerce
- Pre-Educational Training Department, Institute of Postgraduate Education
- Extra Mural Faculty
- External Courses
- Institute of Informational Technologies
- Department of International Relations and Strategic Development.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Internationalization

Increasing competition among higher education institutions

THE WIDER CONTEXT

Globalization of the economy has caused a significant impact on the development of the international education market. At present many governments are concerned about the development of national education, while ensuring the provision, protection and quality of education at the international level, consider globalization as a mechanism for introducing new legislation also covers higher education sector.

In the context of globalization the European integration process in science and education sphere has two components: 1) the formation of the Commonwealth of leading European universities under the auspices of the document, called the Great University Charter (Magna Charta Universitatum); 2) integration of national systems of education and science in the common European space of unified requirements, criteria and standards (ECTS). One of the main ideas of the Bologna process is the idea of academic mobility, the essence of which is to facilitate the exchange of experience between teachers and students from various universities in different countries.

National system of higher education is also experiencing the effects of globalization. In 2007 there were 26.72 thousand students enrolled from Ukraine in the world, which is almost 1% of the total flow of foreign students. Ukraine got 21st position in this rating. At the same time higher education in Ukraine is popular in the international market and occupies 16th place in the list of countries that accept foreign students. According to UNESCO data on foreign students from Ukraine, the majority chose to study in Russian Federation (24.2%) and Germany (23.1%). The five most popular countries among students from Ukraine are also Poland (the country selected 10% of students), USA (5.8%) and Hungary (5%).

Scientists, exploring the education services, believe that higher education in Ukraine is experiencing strong market pressures, as it cannot entirely rely on government funding and is seeking financial support on the market, generating competition among educational institutions [4, p. 6].

Analyzing the development of higher education market in Ukraine over the past 22 years, we can say that the total number of university students of HEIs of III-IV accreditation levels in absolute terms was increasing for a long time (Fig. 1). However, since 2004 there has been a tendency to reduce the rate of growth - in 2008 it was 2.3%, and in 2009 even became negative - such decline was observed for the first time in the last 14 years, and this negative trend continued up to 2011. During 1990-2011 the average growth was 4%, and comparing the number of students in 1990 and 2011 we can see that it increased more than twice – 2.2 times. Note that in France the amount of students in the last ten years increased by only 37%, about the same are the temps of development of higher education in Great Britain, while in Ukraine the growth for the same period was 84%.

As shown in Fig. 1, in 2011/12, in Ukraine nearly 2 million students studied at the universities of III-IV accreditation levels. When in 1998 the number of students exceeded 1 million, the Ukrainian system of higher education was given the prefix "mega" - this prefix is possessed of higher education of only 20 countries in the world [1] and in 2007/08 it was given to higher education system in 27 countries [5, p. 128-137]. In the ranking of countries by number of students, in 2007 Ukraine ranked the 10th place, taking 2% of the market. Overall, all countries with so-called "mega-systems" of higher education cover 80% of global amount of university students (Appendix A).

The process of expanding market of higher education in Ukraine has reached its peak point, and started to decrease. The statistics for admission to the university shows the trend to decline. This phenomenon cannot be unambiguously negative, since such fluctuations are a sign not of the process of rapid decline, but possible signs of market stabilization process, which is the beginning of the formation of balanced market of higher education. There appears a question on the factors having influenced on such changes. Has the higher education become less important among the people? On our mind, the phenomenon should be described regarding the introduced system of external independent evaluation (testing) of knowledge in 2006 (EIT). During the first year of testing this model by several major universities of the country, the growth rates of admission were less than 1% (the lowest in the last 13 years). Experience of enrollment as a result of EIT has spread to all universities in Ukraine, and we experienced a reduction in number of students of the first year of study.

According to UNESCO, since the beginning of the century the demand for higher education increased by almost 50%, and international forecasts indicate that growth will continue. [7] The total number of students in the world in 1970 was 28.6 million people, in 2000 - 100.8 million people, by 2007 it rose to 152.5 million people, and in 2009 it was 164.582 million people [6, p. 180-189]. During 39 years the number of students in the world has increased almost in 6 times. This means that the average annual increase was 4.6% and the average number of university students has doubled every 15 years. But a closer look at the data allowed to see that expansion has been particularly intense since 2000 – for nine years the 63.8 million of new students were enrolled at universities around the world.

Development of a network of universities of II level of accreditation, or rather its essential improvements resulted in a significant impact on the overall statistical picture of the market of higher education in Ukraine. In 1997, in Ukraine the number of universities of I-II a.l. decreased by 130 units (approximately 16.5%) compared to the previous year, while increasing the

number of higher education institutions of III-IV a. I. by 2.2% (from 274 to 280 units). This fact is the cause of lower overall growth of universities in Ukraine and reduction of positive growth.

The highest growth rate of HEIs of III-IV a.l. was recorded in 1994/95 school year, when the increase was 46% against the previous year. Overall growth of universities of III-IV a. I. increased till 2008, indicating positive trends of quantitative development of higher education in Ukraine. But over the last three years the number of high school units decreased by 3 or 4 units each year. Totally during 1991-2011 the network of universities in Ukraine increased by 5%, the number of higher education institutions of III-IV w a. I. increased by 2.3 times, while reducing HEIs of I-II a.l. by a quarter. Such statistics due to the fact that a large number of universities of I-II a.l. were gradually reorganized into institutes and academies, passing accreditation barrier.

In this statistical analysis especially informative is the average number of students per each higher education institution for accreditation level. For example, in 1990/91, for one university of I-II a.l. there was an average of 1,020 students, for the university of III-IV a.l. - 5914 students, and 2011/12, these figures were respectively 712 and 5666 individuals (Fig. 2).

Analyzing the whole period, we see that during 21 years each institution of I-II a.l. lost an average of 30% of students, and institutions of III-IV a.l. - 4% of students.

In 2011 in Ukraine for 10 thousand people there were 429 students, which is 2.5 times higher than in 1991. at the same time we can state the fact that the trend of increasing number of students in relative terms is stored on the background of permanent population - here for 18 years, the rate of growth of the indicator is negative.

Over the years of 1990-2011 the population aged 15-24 years also tends to decrease, but at the same time the number of students increased till 2007, and in 2008 there was a decline of 0.3%. Using Multiple Regression module in the application package "Statistica 7" we analyze the correlation between the observed number of university students of III-IV a.l. and the following parameters: fertility, household income, and number of registered unemployed. The analysis shows that among all selected indicators the correlation is between number of university students and (1) indicator of fertility (moderate direct effect, $r = 0,64$) and (2) number of registered unemployed by the reason of: University graduate (strong influence, $r = -0,84$). Thus, we have shown that the possibility of further employment has a significant impact on the number of students in the universities of III-IV a.l.

Obviously, a decisive influence on the amount of admission to universities is by an indicator of secondary schools graduates. According to the statistics, since 2004, there has been negative growth in this indicator, which corresponds to the above-described trends in the market for higher education. The ratio between the number of graduates who have received a certificate of secondary education and the number of enrolled in the initial cycle of education in college, the III-IV a.l. is represented as a curve in Figure 3.

Figure 3. Correlation between the number of secondary school graduates and students of HEIs of III-IV a.l., 1990-2011. Source: [3]

The graph clearly shows the pattern correlation between the two indicators - the rising factorial variable (graduated students) causes increasing productive variable (admission to

university) and vice versa. The conclusion made by the visual image, is also confirmed mathematically by calculating Pearson's coefficient, which was 0.85 and indicates a high density connection.

At present, we can observe a qualitatively new dynamics of the market of higher education. Resources for the quantitative increase in the number of students and the demand for education decrease, due to demographic problems. Note that the negative birth growth stopped in 2002 – from this time in Ukraine children were born with an average increase of 4% each year. Given the time lag size of 16-18 years, which separates university admissions from birth, and provided constant non-demographic impacts can be expected to re-trend growth in University Admissions in 2018-20. We can state the fact of increased competition in the domestic education market, which arises from the following:

- Expansion of the educational market in Ukraine has stopped;
- There is a downward trend in the growth rate of the number of university students of III-IV accreditation levels;
- For the period of 1991-2011 the network of universities in Ukraine increased by 5%, while at the same time, the population aged 15-24 years tends to decrease.
- This causes the intensification of quality competition between universities in the future, which, among other effects, can lead to improving the quality of higher education in Ukraine.

Regional context: characteristics of higher education sphere of Lviv region

During the analysis of the market of educational services at the regional level there appears a need for grouping (clustering) regions in order to identify common characteristics that are inherent to each of them. The indicators for analyzing development of market of higher education in the regions of Ukraine (selected and divided into 4 groups), include the following:

Indicators of creating a network of universities:

- total number of higher education institutions of III-IV a.l. in general, and in the context of ownership and types of institutions (units);
- university of III-IV a.l. per 10 thousand people (units).

Results of forming a contingent of university students:

- number of students in higher education institutions of III-IV a.l., and per 10 thousand population of the region (people);
- structure of the student population by source of funding of studying and types of learning proportion of students in the total resident population (%)
- proportion of female students in the general student population (%)
- admission of students to higher education institutions of III-IV a.l. by source of funding for studying and types of learning;
- structure of enrollment of students to universities by region (%)
- graduation of specialists from HEIs of III-IV a.l.;
- number of foreign students, people.

Indicators of forming technical base of universities:

- library fund - total and per 1 student of university;
- study area in universities by region per one full-time student (m²/person);

- number of seats in catering at university (units);
- number of seats in catering per 1 student (units).

Indicators forming faculty of the universities:

- number of doctors at the university (people);
- number of PhDs (doctors) at the universities per 100 full-time students (persons);
- number of PhDs candidates at the university (people)
- number of PhDs (candidates) per 100 full-time students (persons).

As a result of this research there can be determined 5 groups of regions of universities in terms of their development. Grouping of regions in terms of the development of higher education clusters showed that the Lviv Oblast (region) is in the second cluster, along with such powerful educational areas as Kharkiv and Donetsk regions. Combining fields in the clusters indicates the similarity of institutions of higher education that are located in the territory. According to the grade, Lviv has been one of the top five educational regions of selected indicators that we believe are most representative of the analysis of the level of education. Table 1 shows the list of selected indicators, and the place in the ranking of Lviv region.

Table 1

The position of Lviv region in the national ranking of areas in terms of high school in 2010/11

Indicator	Number	Ranking place
Number of HEIs, units	22	5
Admission to HEIs, people	26 316	5
Total number of students, people	137 068	4
Graduated from HEIs, people	31 211	5
Studying on state subsidies, people	64 25	4
Number of Ph.D. (candidates), people	5 138	3
Number of Ph.D. (doctors), people	97	3
Total book fund, copies	10 916 247	6
General area of study-lab rooms, m ²	973 360	4
Seats in public catering, units	9 785	3

Source: prepared on the base of [2]

Thus, Lviv Oblast (region) is a leading Ukrainian region in the field of higher education, it possessed the 4th place in the total number of students in higher education institutions of III-IV a.l., the third highest number of doctors and candidates of science (as a staff), fifth place in

terms of admission to universities and graduating. Also, it should be emphasized that logistical (technical equipment) support of the educational process in the Lviv region is on the high level - the area is the fourth in Ukraine for its of educational and laboratory facilities.

In 2010/11 about 2.13 million students studied at the universities of Ukraine, while Lviv region covers 6.4% of the total market. Statistics show that in 2011 the HEIs of III-IV a.l. released 33.9 thousand specialists onto the labor market, according to the admissions 26.3 thousand students entered the universities, and at the beginning of 2011/12, 131.2 thousand students studied in all the universities. The average annual rate of decline of the number of students in the Lviv region accounted for nearly 3%. Note that in Ukraine the figure for the period is 6%. Annual growth rate of the number of students in Lviv is 0.2% higher than nationwide. Market research of services to higher education in the Lviv region enables us to say that the region is leading in the field of higher education in Ukraine, educational institutions of the region are popular among residents of other regions of Ukraine, and the educational activities of high school in Lviv region plays a significant role in improving dynamics of the studied areas in the national scale.

The network structure of universities of Lviv region dynamically changed during the Ukraine's independence. There was an integration of facilities by joining the HEIs of I-II levels of accreditation to the universities, getting of status of a national by a number of universities, reorganization of colleges into institutes, institutes – into academies, universities and others. As of 2010/11 there operated 22 universities of III-IV a.l. of different ownership in Lviv region. Universities dominated in the network of HEIs of III-IV a.l. in 2011 in Lviv region - there were 12 of them, including 10 of state ownership.

According to the statistical reports annually prepared by the HEIs for the Ministry of Education, we got information about the formation of a contingent of students at the universities of Lviv region in 2010/11. The indisputable leaders of higher education services market are Lviv National University "Lviv Polytechnic" and Lviv Franko National University, which together cover almost 50% of the market.

According to statistics, in Lviv region 44.4% of students are enrolled on the state budget studies, while the remaining 55.6% – at the expense of individuals and businesses. If you divide the number of students of Lviv according to the form of ownership of universities, we see that over 90% of students are enrolled in public high schools.

The following 4 groups (clusters) can be identified among the HEIs of Lviv in terms of their educational activities: 1) market leaders, 2) followers, 3) university sector, and 4) narrow-specialized and private universities. It should be noted that the LAC was included into a second cluster, indicating a fairly high rate of higher education. The following analytical data shows that Lviv region is the leading region in terms of higher education, but the trend in the region is not entirely optimistic. Higher education is experiencing the period, similar to the nationwide trend. This indicates the formation of dynamics of the number of students (admission to universities, number of students and the number of specialists) and developing a network of universities in Lviv region over the past 17 years.

RATIONALE AND INTENDED RESULTS

Due to the increasing competition in the education market the strategic goal of international cooperation of LAC is active integration into the global educational and scientific space by adapting the education system to European standards of higher education, indicated in the Bologna declaration. During recent years, many international programmes have been offered, particularly for education and training of students abroad. Some of these programmes are free for best students, some – partially paid. Access to information on these programmes is free, as it is placed online, in print and other sources.

Accordingly, the Academy can not stay aside of this process, since LAC students participate in the programme, resulting in an increasing outflow of students and graduates from the academy. There has been a steady unwillingness of full-time students of the academy to continue their education after getting Bachelor's degree. Students turn for advice to the Department of international relations and express their desire to continue their studies at foreign, mostly European, institutions of higher education.

There was a need to take drastic measures to increase the attractiveness of getting higher education at LAC. One of the areas of strengthening the competitive position on the educational market for LAC was creation and implementation of the programmes of two diplomas and joint curricula for undergraduate with foreign partners, graduate and post graduate courses. Indeed, one of the most important elements of the Bologna process is getting diplomas simultaneously in two different countries. This is reflected in the overall programme of the Academy for the years of 2012-2017 and work plans of units.

Introducing of the programme of two diplomas we expected an increase in the number of students of the Academy, including attraction graduates from specialized training schools in the city of Lviv with in-depth study of French, Polish, German and English by getting two diplomas.

Experience in implementing similar programmes at the academy existed in 2008/2009 when operating a joint master's programme with the Higher School of Economics ALMAMER, students received two master's degrees - Polish and Ukrainian. So the academy had organizational and institutional preconditions for successful implementation of the programme of receiving two (double) diplomas:

- Availability of conceptual apparatus that is compatible with European;
- Competence of teachers and students in foreign languages;
- A clear focus on international cooperation, internationalization and the Bologna Process, underlined in the strategy of the Academy;
- The presence of stable contacts with foreign universities.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The Academy held a meeting of the Academic Council and the General Meeting of heads of departments, which discussed the prospects of the programme of receiving two degrees and joint study programmes in various departments and specialties. After all, high-quality programme of two diplomas meets not only the needs of partner universities, but also meets the needs of society as a whole. The programme should meet the needs of students and observe national law and institutional rules and regulations, keeping high quality standards and having a solid foundation in the form of detailed inter-university agreements.

Department of International Relations and Strategic Development of the Academy has developed and submitted to the administration proposals to improve existing and introduce new cooperation programmes with foreign universities.

A favourable factor was the implementation of the Academy, TEMPUS project "Modernisation and development of profesionalized disciplines (MODEP) 144920-TEMPUS-2008-FR-JPCR", aimed at introducing general professional courses Lisans (L3) - equivalent to Bachelor and Master (M1 and M2) in the field of management, adapted to the needs of training in universities of Ukraine, Belarus, Moldova and Morocco, according to the Bologna process, and one of the results – two diplomas (Ukrainian and French, in specialty "Management"). The faculty "International Economic Relations" and specialty "International Economic Relations" were chosen to implement the project baseline.

After the selection according to certain criteria, (one of which was knowledge of French), a pilot group of 16 people was formed to participate in the project. These students are simultaneously enrolled in two universities: the LAC and D'Auvergne - Clermont 1, which provides an opportunity to get two diplomas after graduation: Ukrainian State Diploma and Diploma of French University (lisans level or master).

Organization of the French course that took place in parallel with the Ukrainian, was based on two main principles:

The principle of reciprocity: universities should have come to a common point of view on the list of subjects that were to be taught at Ukrainian universities. The study was carried out in Ukraine and was excepted by the French university D'Auvergne - Clermont 1;

The principle of three parts, the essence of which lies in the fact that one third of the teaching disciplines of the curriculum was done at Ukrainian universities and excepted by French university, another third part was taught using platform Claroline, the last third part of the programme was taught by French teachers, while Ukrainian students were in France.

Two thirds of the programmes were taught at the University D'Auvergne - Clermont 1, half of them were taught using platform Claroline, the second half was taught to Ukrainian students during their stay in France for 4-5 weeks. No discipline was taught in 100% online: only half of the subjects (basic material), and the rest - in the university of D'Auvergne - Clermont 1 (practical skills). According to the European ECTS the training programme was as follows:

Integrated European programme LICENCE 3 for the students from Ukraine

Course title	Hours	Number of ECTS credits	Semester	Lecturer (country)
Block UE 1		11		
Foreign language 1 (French)	40	3	5	Ukraine
Foreign language 2 (English)	20	2	5	Ukraine

Mathematic analysis	25	2		EU
Contract law	25	2		EU
Free credit (course to be chosen) World commodity markets	20	2	5	Ukraine
Block UE 2		9		
Economics	25	2		EU
International public law	25	2	5	Ukraine
Social law	25	5	2	Ukraine
Enterprise management	40	3	5	Ukraine
Block UE 3		10		
Analytic auditing - control	40			EU
Marketing (Ukr.) and Commercial management (EU)	25	2	6	Ukr/EU
HR-management	25	2		EU
Free credit (course to be chosen) Marketing studies	20	2	6	Ukraine
Block UE 4		15		
Foreign language 1 (French)	40	3		Ukraine
Foreign language 2 (English)	20	2		Ukraine
Communication	30	2		EU
Financial management	20	2		EU
Tax system at enterprises	40	4		EU
Informatics of management	20	2	2	Ukraine
Block UE 5		6		
Private management	30	3		EU
State management	30	3		EU
Block UE 6		9		

Interdisciplinary activity (business games, case studies)	30	3	7	EU
Internships at the enterprise	16 weeks	6	6	Ukraine

Integrated European programme MASTER1 for the students from Ukraine

Course title (European)	Hours	Credits ECTS	Semester	Lecturer (country)
Block UE 1		17		
Foreign language 1 (French)	40	2	7,8	Ukraine
Foreign language 2 (English)	20	2	5,6	Ukraine
Microeconomics (Higher level)	20	2	7	Ukraine
Communication	20	2		EU
Means of forecasting	20	2		EU
Control of management	30	3	7	Ukraine
Project management	20	2		EU
Free credit (course up to your choice) Information-analytical activity in international relations	20	2	7	Ukraine
Block UE 2		13		
Strategic management	30	4		EU
Strategic control	20	2		EU
Consumer law	20	2		EU
Internet in marketing	20	2	7	Ukraine
Tax system at enterprise	30	3		EU
Block UE 3		9		
Interdisciplinary activity (Business games)	20			Ukraine
HR-management	30	3		EU
Foreign language 1 (French)	40	2	7,8	Ukraine
Foreign language 2 (English)	20	2	7,8	Ukraine
Block UE 4		11		
Commercial management	30	3		EU

Financial enginery	30	3		EU
Logistics	20	2	7	Ukraine
Free credit (course up to your choice) International customs regulations	30	3		Ukraine
Block UE 5		10		
Research activity (project of the research)		3		EU
Internships at the enterprise		7		EU

Ukrainian students are excepted for this study along with their basic study in Ukraine, studying the same programme as the French students, they are subject to the same principle of a diploma as French students, and they pay the same entry fee.

On graduation Ukrainian students receive diplomas of the same pattern as the French students, i.e.:

- LICENCE "Economics – Management" studying "Engineering Management"
- if they continue their studies at Master 2, they get a Master of "Management of Enterprises" in "Management of small and medium-sized enterprises" or "Management of public enterprises."

Due to mutual agreement the scheme came into force in September 2009 and still operates successfully. As a result of changes introduced there appeared a convergence curricula of higher educational institutions of Ukraine and France, there was established a joint curriculum and training of qualified personnel in the management of enterprises and public authorities. One of the most important results is the possibility of students of LAC to get two/double diplomas, on the base of agreement with the University D'Auvergne - Clermont 1 (France). Students enrolled in the European programme and received French bachelor's degree after three years of study and a master's degree - after five years of study in specialties "Management of Public Company" or "Management of private enterprise."

During the years of 2009 – 2012 the following number of students took part in the project:

- 2009/2010 level L3 - 5 students
- 2010/2011 level M1 - 5 students, L 3 - 7 students
- 2011/2012 level M 2 - 5 students, M 1 - 5 students, L 3 - 6 students
- 2012/2013 level M 2 - 5 students, M 1 - 5 students, L 3 - 8 students.

21 students have completed a full cycle of academy training at level LICENCE 3 (bachelor's), ten students - MASTER 1, MASTER 2 (two-year master's programme) according to European programme, and received certificates of French University. All costs associated with training, were covered by the funds of the project. Now nine Academy students are enrolled in courses of French language organized by the Academy, lasting 180 hours, to enter the university D'Auvergne - Clermont 1 at Bachelor's programme.

The above described system of solutions is designed for a relatively short period of time and takes into account the relatively limited number of students who speak French at a sufficient level. Its introduction to the medium and long term was proposed with the usage of a different

scheme. Assumed that initially it would be enough if the university from the first year of study would recruit a group of students who want to learn French, or have already studied it.

Thus, it was possible to record students, according to the French course, for a French university diplomas for the first two years of study (Duma 1 and 2), followed by the third year Lisans (L3), and then – master (M1 and M2). This scheme requires that the first two years of study (Duma 1 and 2) are necessarily devoted to the study of French. The Academy has decided to introduce a second foreign language from the second year for the students of all specialties. We hope that in the nearest future we will be able to create a Ukrainian-French Institute.

RESOURCES REQUIRED AND USED

To implement the programme of receiving two/double diplomas in conjunction with the French university D'Auvergne - Clermont 1 the Administration of the Academy assigned considerable resources. Only a portion of disciplines, designed to study in Ukraine, were learned as part of the students' academic groups, the rest of the subjects were studied by a group of pilot participants. To teach these subjects seven teachers among associate professors and professors were assigned, which significantly increased their academic workload and thus wages. In addition, tutor of the groups and individuals responsible for the advertising campaign and promotion of the new programme were appointed, whose work was well rewarded.

In addition, students were organized to have free courses in foreign languages, including French, lasting 180 hours. From the second semester of 2011/2012 academic year the same course started for the teachers and staff of the Academy. For the construction of specially designed computer class the necessary facilities have been allocated and renovated. Since the programme of receiving two diplomas started and the Academy implemented the TEMPUS project, most of the costs have been covered by project funds and only after the project finished we have continued this work entirely from own funds.

FACILITATING FACTORS

A favorable factor was the involvements as a partner in the implementation of the TEMPUS programme "Modernisation and development of profesionalized disciplines (MODEP) 144920-TEMPUS-2008-FR-JPCR", which gave us the opportunity to work closely with universities from the European Union and adopt a great experience. Of course, a great success was the possibility of learning new teaching methods by the teachers of LAC, participation in training workshops, training teachers and staff in Ukraine and abroad.

We were able to form a team of highly qualified teachers, management and motivated students, which allowed to continue successful operation of the programme to obtain two diplomas after completion of the TEMPUS project. Extremely important positive factor is the free education at French university D'Auvergne - Clermont 1, where students pay a registration fee and their stay in France (accommodation, food and transport costs).

CHALLENGES AND OBSTACLES

While implementing the programme of receiving two diplomas, there were some difficulties. The first ones – different study cycles: most Ukrainian universities have 4 year Bachelor programme and 1 or 1.5 years of Master's, at European universities – 3 years of Bachelor's and 2 years of Master's programme. The problem was the small number of French speaking students. But after the organization of courses of foreign languages, many students expressed a desire to learn languages, including French, so the number of potential programme participants to obtain two diplomas increased.

Experience of participation in educational exchange and training of students within the agreements between LAC and foreign universities also met significant discrepancies with the requirements of the education process: conditions for participation in study abroad programmes, the formation of individual study agendas, selection procedures of candidates that have to be harmonized with curricula of foreign partners. The proposed integrated curriculum should be adapted to national standards of Ukraine and the European standards. There was a need to train teachers and administrators with the skills needed to implement programmes of receiving two/double diplomas. The most difficult problem is the accreditation of the new structure (in this case, Ukrainian-French Institute), which is to coordinate activities and development of this and similar programmes at the institutional level.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

During the programme of two certificates together with a French university D'Auvergne - Clermont 1 the first innovative priority was just a professional approach to teaching this course, on one hand, limiting the teaching of basic subjects and promoting maximum application of practical skills and simulation of management and, on the other hand, facilitating involvement of a large number of professional companies that could provide part of teaching. Due to a technical assistance the server was used in the learning process, a new computer lab, software for a number of disciplines, and business management games (Tell me more (English, French), Logiciel Ciel, Mondial Manager, Shadow Manager).

Possibility of simultaneous getting of two or more diplomas in different countries has increased while implementing educational programmes using e-learning and distance education technologies. LAC and its partners successfully developed a system of distance education. The organization of teaching in the form of distance learning allows, especially at the initial stage of training, to start the programme of receiving two diplomas even in case of a small number of students. Having a platform for distance learning Claroline allows to have distance learning, which is confirmed by a signed agreement with the University D'Auvergne - Clermont1.

SUSTAINABILITY OF THE GOOD PRACTICE

Continuation of the programme of receiving two diplomas in conjunction with the French university D'Auvergne - Clermont 1 is guaranteed by the signed agreement with this institution until at least 2016. Further, the agreement can be extended by mutual consent of the partners. The top management of the Academy understand the necessity of this and the introduction of new similar programmes, evidenced by the Academic Council of the Academy, dedicated to

the analysis and development of recommendations to enhance and expand the implementation of joint programmes with foreign universities. There is a constant search for reliable European partners interested in implementing similar programmes. The implementation of the above programme (even for a relatively short period) suggests strengthening the competitive position of the Academy, increasing the attractiveness of education at LAC, particularly during the admissions period many students confirmed that their choice was made in favor of the Academy thanks to the presence of potential receiving of two/double diplomas.

TRANSFERABILITY OF THE GOOD PRACTICE

- Adapting best practices of programmes of receiving two/double diplomas (national and European) will allow:
- Establishing close and effective relations with European institutions, which in the future may be developed not only in the direction of improving the educational process, but also conducting joint researches;
- Increasing motivation of staff and students to master foreign languages not only in the use of foreign scientific sources, but also in the perspective of teaching foreign languages;
- Dissemination of information about innovative approaches to teaching at the Academy on the regional and possibly national education market and, consequently, the increased number of potential entrants;
- Getting the opportunity to introduce the learning process of progressive teaching methods and modern information technology used by leading foreign universities;
- Increasing motivation of students to study and improve the effectiveness of a faculty excellence of teaching and work with students on the basis provided for internship programmes.

LESSONS LEARNT AND RECOMMENDATIONS

The success of the project was provided, first of all, by the support of the initiative and understanding of the importance by the highest management of the institution implementing the planned activities, allocation of necessary resources by the administration, solving problems that occurred at the highest level, including their discussion at meetings of the Academic Council of the Academy. Besides, success was achieved thanks to the efficient and harmonious work of the team consisting of teachers, administrative staff and students.

As a result of the continuation of the current situation in the future, in our view, it would provide more opportunities for the training of teachers and exchange of experiences in educational and methodical work, and expand cooperation through joint research activities that would be provided at conferences, seminars or other events. Educational institutions should look for opportunities and resources to adapt these practices despite the current difficulties as education market makes more stringent requirements and demands more effective and qualitative methods of competition. As H. Ford said, "there are much more those who surrendered themselves than those who won."

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Annex A

Countries with “mega-systems” of higher education
(number of students of HEIs is more than 1 mln people)

<i>No</i>	<i>Country</i>	<i>Number of students of HEIs, thsd people</i>	<i>Share in total number of students in the world</i>
1	China	25 346	16,8%
2	USA	17 759	11,8%
3	India	12 853	8,5%
4	Russia	9 370	6,2%
5	Brazil	5 273	3,5%
6	Japan	4 033	2,7%
7	Indonesia	3 755	2,5%
8	Korea	3 209	2,1%
9	Iran	2 829	1,9%
10	Ukraine**	2 819	1,9%
11	Egypt	2 594	1,7%
12	Mexico	2 529	1,7%
13	Philippines	2 484	1,6%
14	Turkey	2 454	1,6%
15	Thailand	2 422	1,6%
16	GB	2 363	1,6%
17	Argentina	2 202	1,5%
18	France	2 180	1,4%
19	Poland	2 147	1,4%
20	Italy	2 034	1,4%
21	Spain	1 777	1,2%
22	Vietnam	1 588	1,1%
23	Nigeria	1 392	0,9%
24	Venezuela	1 381	0,9%
25	Columbia	1 373	0,9%
26	Bangladesh	1 145	0,8%
27	Australia	1 084	0,7%

*Source for the data [5]

** based on the data of Statistics Committee of Ukraine, in 2009 there were 2 318,6 thsd students in Ukraine

12. Internationalization through International Education Programme Implementation

National Technical University Kharkiv Polytechnic Institute, Ukraine

EXECUTIVE SUMMARY

This case examines the impact of implementation of the first International Business Degree programme provided in English on internationalization of management education at National Technical University “Kharkiv Polytechnic Institute” (NTU “KhPI”). Increasing globalization of economy and new requirements of advanced employers at the Ukrainian market in the middle of 2000s demanded radical changes in management education. The traditional system of studies could not meet latest requirements and assure the competitiveness of International Business graduates at labor market. The effective way to address this challenge was to internationalize business education by offering programmes in English based on international education quality standards. One of the objectives was an increase in mobility of Ukrainian and European students.

Focus of NTU “KhPI” leaders on active participation of University professors in international education and research projects not only has brought the recognition of the University as one the most ambitious in the country in this respect, but also led to effective professional development and empowerment of University instructors.

Change agents, who initiated the programme, did not hold any administrative positions, but were able to bring together the team of motivated instructors, who despite the absence of monetary incentives, excelled in the development of an outstanding programme. The strength of inspired core group, which understood clearly the market expectations, the University top-management openness to grass roots innovation, and long-term fruitful partnerships with a number of Western Universities led to the successful launch of ambitious International Business programme with courses provided in English. The uniqueness of the programme is related to its student-centered nature, broad use of interactive methods of teaching, collaboration with international colleagues and businesses, access of all students to various learning experience, and international expertise.

Strategic approach to further enhancement of International Business programmes in English led to creation of Joint Double-Degree Programme with Otto-von-Guericke University Magdeburg, Germany (OvGU), which stipulated regular exchange flow of students and professors and increased collaboration attractiveness in the eyes of other European partners. In spite of some obstacles the International Business programme in English has a bright future. Employers and graduates highly appreciate the results of the programme emphasizing its innovative nature on Ukrainian education market.

BACKGROUND INFORMATION

NTU “KhPI” is the oldest technical higher educational institution (HEI) of Eastern Ukraine. It is among the top three technical universities in Ukraine located in the most industrially developed region of the country. The University was founded in 1885. Its name has been changed repeatedly: "Practical Institute of Technology" (1885), "Kharkiv Institute of Technology" (1898), "Kharkiv Polytechnic Institute" (1929), "Kharkiv State Polytechnic University" (1994). On September 11, 2000 under the decree of the President of Ukraine taking into account both international and nation-wide recognition and an important contribution to development of national higher education and science the status of national university with the name of National Technical University "Kharkiv Polytechnic Institute" was given to Kharkiv State Polytechnic University.

History of the NTU “KhPI” became an integral part of the scientific, technical, intellectual and cultural history of Ukraine. Its mission lies in creation of knowledge for ensuring stable development of the national industry branches. The name of a Noble Prize winner L. D. Landau and the names of the world-known scientists such as academician N.N. Beketov, P.P. Budnikov, A.K. Valter, A.M. Lyapunov, G.F. Proskura, V.I. Atroschenko, A.S. Berezhnoy, A.M. Pidgorny, the Honoured Doctors D.I. Mendeleev, and M.E. Zhukovskyy and also the name of Prof. V. L. Kyrpychov, the founder of the NTU "KhPI", and many others are closely associated with NTU “KhPI”.

Nowadays, the University includes 23 faculties, 90 departments, Machine-tool College, Institute for Tank Troops, science and technology library, Inter-branch Institute for Advanced Studies of professional community, Distance Education Centre, research department, three scientific-research institutes. Experimental bases of research and design "Blyskavka" Institute and "Ionosphere" Institute are recognized to be the national heritage of Ukraine by the National Academy of Sciences and the Ministry of Education and Science of Ukraine.

The North-Eastern Regional Centre of Scientific-and-Educational Network of Ukraine (URAN) was set up by joint decision of the Ministry of Education and Science of Ukraine. This Center provides fruitful work of a powerful information system of the University, which includes one of the biggest among Ukrainian HEIs and powerful unit of the Internet system. Local scientific-and-educational network, which includes 20 educational-and-scientific institutions in the city of Kharkiv, was arranged on its basis.

At the moment more than 22 thousand students, including about international 1000 students from 31 countries, 320 post-graduate students, 1597 faculty members and researchers work and study at the University. NTU “KhPI” offers Bachelor (4 years), Master (1,5-2 years) and PhD degrees. The University is heavily involved in international cooperation. Currently NTU “KhPI” has agreements with 64 foreign HEIs and companies from 24 countries. Several years ago the University was recognized as the best in field of international programmes among all HEIs in Ukraine. Collective and individual grants of Soros Foundation, grants of USA Information Agency, German academic exchange service DAAD, land grants of Germany and other organizations, were obtained. INTAS, TEMPUS/TACIS, INCO-COPERNICUS, and UNESCO projects are implemented at NTU “KhPI”.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS

ADDRESSED

Internationalization

THE WIDER CONTEXT

Ukraine functioned as one of the republics of the Soviet Union until its collapse in 1991. During the planned economy period Ukraine as well as other Soviet republics had extremely centralized management at all levels of national education. The government developed and announced the so called “state request” programme regulating annually the quantity of every HEI major graduates and offered state-coordinated “work placement” of the graduates at the enterprises according to that programme. In the system of higher education number of academic hours in the curricula dedicated to Science prevailed over Liberal Arts. Offer of business degrees was quite limited as most of the business graduates’ skills were not required in the administrative command economy.

After the dissolution of the USSR with the transition nature of economy the higher education system faced new challenges, among which were extreme contradictions between expectations of the stakeholders (e.g. University staff and graduates, industry etc.) and reality of the market economy. Connections between different industrial entities now located in the different countries halted, many of them failed to continue its operations, majority struggled to survive, so the feedback on alumni correspondence to the needs of the employers was not provided anymore. Moreover, the latter were not able to formulate their needs at the moment. Total misunderstanding of the requirements for University graduates changed under the influence of global economy and altered economic conditions inside the country was present. And HEIs were left to figure them out on their own.

Many technical Universities introduced non typical new majors, Business and Law were the most popular ones for a while. That was caused by reducing funding from the state budget and increased competition of the HEIs for financially capable enrollees. For some time the business majors’ curricula were overwhelmed with the non-related technical courses, because most of HEIs lacked professionals able to teach business, but still had to offer particular amount of courses. Internationalization made a great impact on retraining of the University staff for the needs of the teaching under the conditions of the market economy.

Let’s consider its role in the evolution of Ukraine’s higher education. Before 1991 in the USSR higher education “internalization” was basically focused on enrollment of students from “socialist camp” countries and Asian and African countries, comparatively rare exchange groups of students between “socialist” and “capitalist” states (which has started to expand in ‘perestroika’ years of 1985-1991). After 1990 national higher education was pushed to introduce reforms that envisaged the growing autonomy, diversification of educational planning and financing and democratization of academic governance. That period of internalization could be considered as a part of economic reforms aimed at rejoining with the global community of scholars.

Also at the time the new majors, study areas and thematic studies appeared, studies of foreign languages gained importance among not only future foreign languages teachers and interpreters, foreign lecturers started to visit the ex-USSR. During that period the activation of academic staff and students internships and professional exchanges promoted by the

foreign embassies (the most active were USA, France, Germany, Great Britain and Canada) and cultural education intermediaries such as American Councils for International Education, DAAD – German Academic Exchange Service, British Council, Alliance Francaise or independent ones was observed.

The evolving activity required some coordination at the University level. That's how offices and departments for international cooperation were set up at different Universities throughout Ukraine and their supervision was charged to one of the vice-rectors. No procedure of implementing grass roots activities existed at the time and every international contact and initiative in that area was welcomed. The new Law of Ukraine on Education (1996) put integration of Ukrainian higher education into the international academic community as a priority goal. It stipulated the right of the universities to engage in global academic, research and economic activities and charged the Department for International Cooperation of the Ministry to Education with supervision and coordination of this area.

In the mid-1990's the projects led by EU-funded Tempus and US funded University cooperation projects aimed at "improvement of university governance and management, upgrading old curricula and developing new courses and programmes, professional development of teachers". This is when internationalization changed from being a goal in itself to serve as an important resource in the development of post-secondary education. This period could be labeled as bottom-up initiatives, when Universities used international intermediaries funding for developing of international cooperation.

With the changes in the political orientation caused by Orange revolution Ukraine turned its eyes towards EU higher education area after 2004 that was not to a lesser extent stipulated by the fact that its education lost the status of prioritized object of strategic interest and funding of the USA. In 2005 the national government signed the Bologna Declaration trying to integrate into political, social and cultural European space through upgrading and reforming higher education. This event indicated top-down internationalization of higher education introduced by the corresponding principal state body – the Ministry of Education and Science of Ukraine (MoESU).

Key developments since joining the Bologna Process include approval of an action plan on quality assurance (QA) in higher education and its integration into the European and World Educational Community until the end of 2010; amendments to the Law on higher education (HE), according to the Bologna principles and recommendations; inclusion of Ukraine as governmental member of the European Quality Assurance Register; the establishment of a working group to develop a National Qualification Framework (NQF) for higher education.

Significant progress has been achieved in three strategic areas of the Bologna Process: implementation of a two-cycle system; implementation of quality assurance in the field of higher education; recognition of diplomas and previous periods of study. The transfer to the first and second cycles has been implemented; the preparation for the third cycle is under way. The pilot implementation of the European Credit Transfer and Accumulation System (ECTS) has been completed in the first and second cycles, and is now legally regulated by Order of the Ministry of Education and Science on ECTS implementation in HEIs (2009).

The strategic objectives set by the Ministry of Education and Science of Ukraine for the higher education sector include development of a contemporary strategy for higher education development, focusing on quality assurance and its integration with European and global higher education areas; development of a sound legal basis for the higher education sector; monitoring and ensuring law enforcement by Ukrainian higher education institutions; improvement of access to higher education and vocational training for the disabled to assist in their adaptation and employability; alignment of higher education legislation with the requirements of the Bologna Process specifically by developing the National Qualifications Framework; promotion of university autonomy, students' self-governance and public involvement with university governance; implementation of programmes to promote talented youth, their academic development and career planning; development of a legal basis and implementation of measures to increase the employability of university graduates.

As an active participant in the Bologna Process, Ukraine recognizes the broad, updated mission of higher education and the role it has to play in globalization, the emergence of a knowledge economy, rapid technological developments and demographic crisis. Along the path of modernisation, internationalization and integration with the European Higher Education Area (EHEA), the upcoming challenges for Ukraine's higher education include completion of a three-cycle system; alignment of university curricula with the Bologna structure; curricula reform with a view to employers' needs; establishment of programmes for foreign students and further internationalization; creation of mechanisms for recognition of prior learning; development of NQF compatible with the EHEA Qualification Framework; development of NQF for Lifelong Learning; development of guidelines for the implementation of ECTS and of the Diploma Supplement of the EU/CoE/UNESCO format; further development of the mechanism for equal access to higher education; creation of the National Quality Assurance Agency for higher education in compliance with the European Standards and Guidelines for Quality Assurance, its full membership of the European Association for Quality Assurance in Higher Education (ENQA) and inclusion in the European Quality Assurance Register (EQAR); introduction of an HEI ranking system; increasing the outward and inward mobility of students and academic and administrative staff of HEIs; assuring the portability of student grants and loans; professional development of research and educational staff according to modern requirements with a view to ensuring sustainable development of higher education system; development and introduction of new educational standards (curricula reform) with a view to improving the quality of the content of education and in order to facilitate employability of graduates; development of academic and financial autonomy of HEIs; promotion of the development of Ukrainian and global cultural values, orientation towards the ideals of democratic ideas.

Despite certain success in Bologna Process implementation there are several major drawbacks. As this is a top-down process the role of the University top-managers was to communicate clearly its importance, priorities, goals, consequences and rewards to all stakeholders. Most HEIs limited their efforts in this area to the publishing of Bologna Process guides, in which they included text blocks from the MoESU materials, leaving it to independent studying by employees. Academic staff has to rewrite the course descriptions and syllabi at least once per semester because of ever-changing MoESU requirements. Lots of additional paperwork connected to student evaluation appears, which is associated by the teaching personnel as a requisite of Bologna Process while it's just a by-product of

misunderstanding of the Process by HEIs' administrators. That causes negative perception of everything associated with Bologna process as it's perceived as extra workload without corresponding financial benefits. Moreover, too often EU integration efforts at the national level are just declarations lacking real actions and reforms in practice, e.g. the new Law on Education is long due and despite the announced goal of HEI autonomy the centralization of decision making by MoESU is only increasing.

Transition processes in economy significantly altered the workforce demand in Ukraine. As the world and economy evolves there are characteristics, skills and knowledge and intellectual capability elements that are required for specific roles. In addition, combinations of transferable skills are also deemed particularly relevant. By the end of XX century local companies started to search for employees with a set of specific soft skills. In 2007 NTU "KhPI" and partner Universities of France, Austria and Russia surveyed their alumni and found out that employers were looking for graduates with the training in the following areas:

- foreign languages;
- ICT knowledge;
- data processing;
- decision making;
- team working;
- presentations;
- negotiations.

Other sources also named problem solving, self-management, knowledge of the business, literacy and numeracy relevant to the position, interpersonal and communication skills, ability to use own initiative but also to follow instructions and leadership skills among employability increasing skills. In addition to these skills, employers also highlighted the need for particular attitudes and outlooks including motivation, tenacity, and commitment. Work experience and internships while at University were seen by employers as particularly helpful in developing these transferable skills.

Employers started to care more for the efforts graduates put into creating a good first impression, CV preparation and self-presentation at interviews. But common criticism was that graduates often did not take the time and care to craft CVs geared to a particular employer, and quite often candidates had unrealistic expectations for the companies and starting salary.

End of XX century was marked with booming growth of technology, which has deeply integrated in our daily lives and changed the very way that universities teach and students learn. Academic institutions are charged with equipping graduates to compete in today's knowledge economy, and though the possibilities are great, significant challenges also loom. Underpaid faculty members used to teaching in one way loath to invest the time to learn new methods, and lack the budget for needed support. At the same time technology has had—and will continue to have—a significant impact on higher education.

Since 1990's NTU "KhPI" offered several Computer Science programmes, owned computer labs and equipment enabling video-conferences. In the early 2000's our University established Center of Distance Education and developed distance education courses. The North-Eastern Regional Centre of Scientific-and-Educational Network of Ukraine (URAN)

served as a powerful information system of the University, which included one of the biggest among Ukrainian HEIs and powerful unit of the Internet system. The local scientific-and-educational network joining 20 educational-and-scientific institutions of Kharkiv was arranged on its basis. In modern world institutions need to demonstrate a commitment to advanced technologies in order to attract corporate partnerships. That goes in line with one of NTU “KhPI” priority goals connected with enhancement of corporate-academic partnerships. All over the world higher education is responding to globalization. Overseas presence is getting to be the norm, and lots of HEIs already have foreign locations or plan to open them. Distance education is also becoming increasingly global, with universities competing for broader clientele basis and applying advanced technologies to put education within reach of many more individuals around the world.

In fact, use of technologies in higher education is a competitive advantage in attracting students and corporate partners. Business recognizes institutional efforts of keeping it up-to-date and finds those HEIs credible partners. For students part it plays right to their strength and preferences. They are the first children of the 21st century who have grown up in an entirely digital world. Some call them “digital integrators”, others the Facebook Generation. In modern sociology they are referred to as “Generation Z”. This generation has very distinct features: they are tech-savvy, able to contact people 24/7, prefer getting answers from Google rather than textbook, demand instant feedback on progress, clear goals and rewards linked to them.

Considering that speed of world’s data creation is growing enormously, the shelf life of knowledge has never been shorter. The focus worldwide is shifting from memorizing knowledge to a process of gathering, analyzing and applying the knowledge. Such changes require rethinking of teaching methods such as shifting to project-based learning in “flipped classrooms”, where knowledge is explored at home and applied in lessons, introduction of e-learning profiles, extensive use of video materials, flexibility to learn choosing the method that works better and cooperative online learning with other HEIs.

Due to intensive engagement of NTU “KhPI” in international projects comparatively large number of academic staff, administrators and students were exposed to the foreign teaching practices, exchange programmes and internships abroad (table 1). These instructors with international experience started to introduce guest-speakers practice, video-conferences with foreign partner HEIs, online learning and other new to Ukrainian higher education methods already in the early 2000s. Availability of required technologies and personal contacts with European and American colleagues tremendously assisted in that. Moreover, NTU “KhPI” top-management always was much more open to changes, especially those associated with internationalization, in comparison with other Ukrainian universities, and supported such activities.

Table 1

Higher education institutions with highest TEMPUS participation during TEMPUS I to III (1990-2006)

Institutions	Total	Number of projects	
		JEP	SCM
National Technical University «Kharkiv Polytechnic Institute»	17	9	8
Taras Shevchenko National University of Kyiv	13	13	0
National University Of «Kyiv-Mohyla Academy»	10	9	1
National Technical University of Ukraine «Kyiv Polytechnic Institute»	9	6	3
Zaporizhzhya National University	8	5	3
Dnipropetrovsk National University	8	8	0
Kherson State University	8	5	3
Zhukovsky National Aerospace University «Kharkiv Aviation Institute»	7	5	2
Odessa National Polytechnic University	7	4	3
Donetsk National University	7	5	2

Besides, American-Ukrainian Business Center (AUBC), Ukraine-French Center and Center “Perspective” were all established in the result of international projects implementation and now play important role in the international collaboration of NTU “KhPI” with academic institutions and foreign business. AUBC renders consulting and education-related services for local enterprises to facilitate cooperation in the field of international marketing and business, actively participates in improvement of the quality of business education at NTU “KhPI”, supports research and post-diploma education in the field of European business, management, and marketing.

Ukraine-French Center provided postgraduate training and internships at French enterprises with the opportunity to receive diploma from Lyon Engineering School with studies undertaken not only in Kharkiv but also in Lyon, France. Center ‘Perspective’ provides consulting services in management, financial management and HR. At present these two centers take part in the realization of TEMPUS Project related to setting up of project financial studio where students, teachers and representatives of business entities can develop real projects on requests from different companies’. The main goal of this project is to establish permanent contact between education institution and business and to provide students with practical skills of team-work on real-life projects. Later on AUBC and Center “Perspective” merged into the International Business Center while still keeping their identities.

Gradually encouragement of internationalization initiatives resulted in growing number of English-speaking instructors. Proactive students, who were capable of comparing learning practices in foreign HEIs due to modern technologies, chose to enter NTU “KhPI” because of its reputation of the University with extensive experience of international collaboration. The number of enrollees possessing some international experience (e.g. participation in exchange programmes) was growing every year. These students actively sought to enlarge their international experience, were interested in studying and working abroad and as a result were more demanding in terms of education quality. Dissatisfaction of students with existed foreign language study, their inspired expectations and interest in novel methods of learning, requirements of MoESU, available technologies at NTU “KhPI” and capacities of particular instructors developed into the idea of providing courses in English and encouraging of joint learning with international peers. It resulted into the international education programme further considered in this case.

RATIONALE AND INTENDED RESULTS

Internationalization is one of the strategic goals of NTU “KhPI” actively supported by its top-management. Previous experience of the University provides with proper background for its involvement into the higher levels that introduction of studies in English opens. Throughout the history of internationalization NTU “KhPI” was engaged in various long-term partnerships with Western HEIs. This helped our University to get vast successful experience that could serve as the cornerstone for the described endeavor: development of programmes in Post Diploma Studies closely guided by the CEUME project (USAID), long-term partnership with OVGU (Magdeburg, Germany) as well six years of intensive collaboration with Iowa State University (Des Moines, USA) provided access to many state-of-the-art educational practices, invaluable experience of incoming Peace Corp volunteers and international experts assisting in teaching activities, earlier TEMPUS projects, and other, which is described in details in the following sections.

Besides, another strategic goal of the University is enhancement of University-Business collaboration, which is heavily promoted by International Business Center. The synergy effect in reaching of these goals led to the emerging of core group, which highly-qualified members had internships at foreign HEIs and/or companies and were interested in further improvements at Alma Mater. It was also clear that past projects benefited mostly researchers and lecturers, while the need to transfer this potential onto students - the most important target audience of the HEI - was not tapped enough.

At the same time the University leaders were aware of the challenges that were endangering future perspectives: talents drain, declining quality of students joining programmes at Business and Finance Faculty, slowly decreasing motivation of instructors, and lowering study morale.

All these factors led to the idea of launching International Business programmes in English, namely studies in English at 1) the Bachelor Degree Programme in Management with the area of specialization in International Business, and 2) the Master Degree Programme in International Business. As for the intended results of change implementation, one can state a number of important interconnected expected outcomes.

Generally, they can be grouped as follows:

- to ensure the competitiveness of programme graduates, and, in particular, attract more capable, talented and ambitious students to the programme;
- to achieve reasonably high multinational and European incoming faculty and student mobility as well as its further steady growth;
- to gain higher motivation for students and instructors;
- to provide access of all students to the different learning experience and, international teachers;
- to create attractive environment for retaining of talented faculty.

Overall, all those results were expected to generally enhance education quality and to benefit all the stakeholders with the advantages that internationalization provides.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The process of introducing studies in English at the Bachelor Degree programme in Management with the area of specialization in International Business, as well as at the Master Degree programme in International Business had, principally, three stages:

- Initiation and planning, 2006 fall - 2007 winter
- Implementation of change, 2007 spring - 2011 spring
- Reaching maturity and enhancement, 2011 fall - current time.

Each stage had clear objectives and included corresponding steps and activities required to achieve them. First stage started in fall 2006 when the idea of introducing studies in English in the professional area of international business was for the first time brought to the open discussion by several faculty members. According to Associate Professor Elena Reshetnyak the process was initially the grass roots initiative. She adds that examining the market and competitive realities, identifying and discussing threats and weaknesses that eventually summoned to potential crisis, assessment of major opportunities and strengths resulted in sense of urgency among some vigilant faculty members. As Associate Professor Taras Danko remembers: "It started rather informally, when after some casual discussions it has become obvious there is a group of like-minded faculty who share the same idea to implement studies in English".

This has led to the establishment of the core group of innovators, who became the owners of the process during the first stage. The University administration approved the idea of International Business programme in English in its essence and delegated the staff authority to the group. Very soon this group gained enough power, credibility, expertise and leadership strength to guide the change. The fundamental steps that followed concentrated on the involvement of additional change agents, engagement of stakeholders, outlining of values, concept, and policies for the programmes that were going to be transferred into English.

Group voluntary initiated as well as joined several parallel activities and projects that gave the synergetic effect in fulfilling the goals of first stage successfully:
strategic planning for business education development at NTU "KhPI";
Salzburg seminar and AUDEM conference in Ukraine;
development of University policy in quality assurance;
series of seminars and roundtables with business;
faculty teaching quality self-assessment.

Involvement of initial group leaders in strategic planning process played significant role. It allowed to align the initiative within the broader plans for the economic faculties' development at the University, as well as to provide it with the legitimacy and support at different levels of University administration. The major components of the strategic plan were made in correspondence to the education quality criteria of EQUIS, AACSB, CEEMAN and the Ukrainian Association of Management and Business Education Development (UAMBDE).

An important influence on the initiative and its support within the University and its administration, in particular, made the visit of advisors from Salzburg Global Seminar in 2005 in the framework of the VAP (Visiting Advisers Project). The objectives of the VAP was to provide practical advice and recommendations to institutions of higher education, which have been coping with the challenges presented by administering the modern University in Central and Eastern Europe and the Russian Federation. One of the visit's outcomes was the

considerable discussion of the University's aspiration to increase student mobility, especially internationally. It was recognized that the essential condition for this is a credible and robust system for confirming that the quality of learning experiences is consistent with internationally accepted academic standards.

Simultaneously, a group of lecturers was involved in the TEMPUS Project PP_SCM-T013A04 "Development of University Policy in Quality Assurance" that introduced the notion of the quality culture within the University and helped to prepare administration and faculty members for the application of quality management principles in their work. Among the key change agents within that projects were Associate Prof. Marina Shevchenko and Associate Prof. Alina Zubkova. Both of them are teaching courses in International Business programme in English.

Additionally, active participation of NTU "KhPI" in the Alliance of Universities for Democracy (AUDEM) as well as signing of the Magna Charta Universitatum by the rector prof. Leonid Tovazhniansky during the period of the first stage were the further aspects that enhanced the prerequisites for internationalization through introduction of the studies in English. The mission of AUDEM is to promote the development of democratic values, civil society, civic engagement, and intercultural understanding through international exchange among institutions of higher education and individuals associated with them, while the Magna Charta Universitatum is a document to celebrate University traditions and encourage bonds amongst European Universities. Both initiatives helped NTU "KhPI" administration to take a broader view on the global and European educational context, reflect upon it, and support embedding international mentality into new international programmes.

Clarifying business community expectations regarding graduates' competences is important step in tuning the programme to employers' needs and higher competitiveness of the graduates. The series of seminars and roundtables with business initiated by the core group in partnership with European Business Association committee in Kharkiv served this purpose quite well. The internal natural partner for the programme core group in this process was the NTU "KhPI" Student Career Center headed by its founder Michael Dovgopol.

Upon it the core group has come up with programme teaching quality self-assessment that started with the joint elaboration by involved faculty on teaching quality assessment criteria. The criteria served as the basis for the future professional development as well as they were intended for receiving feedback from students at the later stage of programmes implementation.

Finally, the preparatory work and planning resulted in the programme institutionalization decisions - that is the official establishment of students study groups at the first and third year of Bachelor study as well as authorization by administration of courses distribution between faculty staff. The administration also discussed the motivation package for academic staff involved in the programme. Since the key decision makers Prof. Vladimir Mishenko, head of the International Business and Finance department that coordinates International Business programmes, Prof. Olexander Gavrys, dean of Business and Finance faculty, Prof. Valeriy Kravets, vice-rector were sufficiently involved in planning activities earlier in the stage, they accepted the recommendations of the core group to much extent

and after making their own input officially submitted the proposal for establishment of the programme to the governing bodies of the University - Methodical and Scientific councils, who authorized the launch of the programme in due course.

Implementation of change was the second stage of introducing studies in English at NTU "KhPI". The major concerns during this stage were enabling the mechanisms that would assure quality of the programme and actual its delivery in accordance with the outlined concept. The implementation of the programme was divided into two steps. At the first step in 2007 students were simultaneously enrolled into first and third years of Bachelor studies. The students willing to study at the third year were recruited from the regular programme among those, who expressed desire and qualified to shift to learning in English. Overall, forty nine students enrolled into three groups on the first year of study, and seventeen students - on the third year.

The second step was implemented in 2009, when the first English learning students completed their Bachelor degree and moved to study at graduate level. The decision to concentrate first on the Bachelor programme was dictated by the traditions of Ukrainian education, where mobility between Bachelor and Master programmes is not very popular as students mostly stay at the same faculties after completion of their Bachelor degrees. The quality of the programme is much dependent on the competences of the students, who are enrolled. That's why it was important to engage students wishing to study in English at the first year of Bachelor study and provide them with adequate learning conditions during the whole period of their expected stay at the University ending up with their graduation with Master degree. These considerations resulted in defining the duration of the implementation stage starting with the moment of preparation of courses content in English in spring of 2007 and finishing in spring of 2011 with graduation of first MS students, who studied International Business in English at NTU "KhPI".

The second stage implementation followed the principle: "Act, check, enhance, get ready to do it on large scale with increasing number of the programme enrollees". Simultaneously with content development other ingredients of the programme quality were assured as well: academic staff development, introduction of the learner centered approach, establishment of the international university partnerships and related projects including double-degree programme with Otto-von-Guericke University (OvGU) in Germany, and enhancement of university-business partnerships.

All these ingredients were shaped through the array of interlinked and mutually supportive activities:

- Teaching Excellence programme;
- adoption of ECTS;
- syllabi development;
- advanced English classes for academic staff;
- establishment of programme's international partnership network;
- joint double-degree programme between the Bachelor of Science in Management and Economics of faculty of Economics and Management of OvGU (Magdeburg, Germany) and the Bachelor of Science in Management with area of specialization in International Business of NTU "KhPI";

- development of collaboration with industry; and
- introduction of new teaching practices like International Business guest speakers and joint video-conferences.

Some of the mentioned activities need extra explanation. In particular, one of the important pillars of the programme implementation was the Teaching Excellence programme coordinated by Associate Professor Elena Reshetnyak at that time. One of her concerns was to seek and know the effectiveness of launched education programmes. Globally, Universities have set standards and guidelines for programmes' evaluation. One such guideline is the participation of students in course evaluations. The results of these evaluations are primary source for determining ways of improving the quality of education. That is exactly how participants of the Teaching Excellence Programme saw it. Correspondingly, participants of Teaching Excellence programme developed a Student Course Evaluation form in order to get a feedback from students for improving their teaching. The questions, included into the form, reflected aspects of teaching that were essential for further improvement of Bachelor Degree programme taught in English. Those issues were also among the priorities of our Teaching Excellence programme for the next year. The information with scores of instructors was available only to them for the purpose of professional growth. The information provided to administrators was given in generalized form without disclosing the personal scores of instructors.

The important recognition of programme quality and the impetus for its further improvement is the establishment of the joint double-degree programme with the Bachelor of Science in Management and Economics of Faculty of Economics and Management (FWW) of OvGU. Since NTU "KhPI" and OvGU recognize the importance and mutual benefit of maintaining international academic links between the institutions, they have undertaken steps to combine efforts to enhance an international academic experience for qualified students and agreed to introduce an innovative double-degree programme that would permit qualified students from both institutions to be awarded dual degrees. The double-degree programme recognizes a high level of compatibility between the associated programmes. To be awarded the double-degree students coming from NTU "KhPI" must complete an eight semester programme equivalent to 240 credit points of study of which 121 credit points and four semesters are completed at FWW. Students coming from FWW of OvGU must complete a six semesters programme equivalent to 180 credit points of study of which 59 credit points and two semesters are completed at NTU "KhPI" in English.

Other activities of the second stage also had positive impact on the programme implementation. For instance, senior lecturer Irina Glushenko, who was involved in TEMPUS project 'University-industry centers: model for cooperation' emphasizes the change of paradigm in finding innovative ways of business engagement during the study process.

And finally the current stage is focused on achieving the sustainability of the implemented changes and programme further enhancement. It is based on the successful results of the previous stages, while introducing advanced improvements within them. This is the iteration, within which the issues that were not the priority on the earlier stages can be properly tackled and fixed. The vital step of this stage is assuring the 360 degrees feedback from key stakeholders: students, faculty, and alumni. The consequent improvements include

change of curriculum, improving syllabus, adding elements of joint teaching and learning, in particular, regular visits of international professors. One more important aspect of this stage is an introduction of the updated policies at the department level as well as at the cross-departmental one. Some steps taken at this stage can be viewed also as the initiation or continuation of the change in the other fundamental education dimensions like creating international university-business partnerships and virtual internationalization. Good examples of those efforts are such activities as summer schools and participation in the TEMPUS project 'E-Internationalization for Collaborative Learning'.

For instance, the annual summer school for Ukrainian students and teachers proved to be a new successful format of partnership with Department of Economics of OvGU to enhance the programme of study in one of the department priority areas - Finance. Summer school 2012 was held in Sevastopol (Crimea, Ukraine) at Sevastopol Institute of Banking UAB NBU (The Sevastopol Institute of Banking of the Ukrainian Academy of Banking at the National Bank of Ukraine). Its subject was financial markets and practical aspects of their functionality. Guest lecturers: Prof. Andreas Knabe and Robin Enke, Department of Economics, OvGU. The key topic of 2012 was application of mathematical methods (Statistics and Econometrics) in the financial markets analysis. The key topic of 2011 was academic writing on the same topic.

The 'E-Internationalization for Collaborative Learning' brought another important dimension to the International Business programmes in English at NTU "KhPI". Its main idea is the virtual internationalization of higher education that presumes the inclusion of different international components into research, teaching and administrative activities of HEIs on the basis of new information technologies use. The project suggested the model of virtual internationalization of higher education by applying web-technologies for communications, study and collaboration. These technologies allow student groups and separate students to study and to meet with teachers and with each other while being at any distance from one another. During the project implementation six partnerships for such collaborations were established with the Carinthia University of Applied Sciences (Austria), Ilmenau University of Technology (Germany), and University of Maribor (Slovenia). The most active lecturers of the programme in this project were Associate Prof. Pavel Brin, Senior Lecturer Anastasiya Makarenko and Senior Lecturer Natalia Shyriaieva.

The programme keeps developing its research partnerships with colleagues from Technical University Hamburg-Harburg from Germany, Kristianstad University and Linnaeus University from Sweden, and is open to new partnerships and initiatives. A nice recent example of the keen approach that the academic staff and students of the International Business programmes in English have towards grasping opportunities of getting involved into challenging international initiatives was the participation of the combined team in the hospitality project for hosting soccer fans at the University hostel during Euro 2012 championship in Ukraine. This also illustrates how the International Business programme is enhanced today by students and faculty staff getting fresh experience and testing their competences in such first-class large-scale European event.

RESOURCES REQUIRED AND USED

Creating and implementing the ambitious international education programme taught in

English for the first time at the University required appropriate resources. The key resource was human capital: a group of very talented instructors, many of whom were between 30 and 40 years old, had to dedicate a lot of their time and efforts to programme development and preparation of courses in English. The strength of this group was its intense involvement in international programmes, experience gained during short term internships abroad mostly at the Universities of Germany, USA and Austria. Having workshops for the core group of instructors by visiting professors, trainers, Peace Corp volunteers also played crucial role.

For more than a decade AUBC and Center “Perspectives” (later jointly positioned as International Business Center) accumulated libraries of management textbooks in English obtained from different international grants, colleagues, organizations (including National Council for Economic Education, USA, University Partnership Programmes, etc). Part of this library was inherited from BEUME project. These rich literature resources were very useful under condition, when the NTU “KhPI”s library was lacking needed literature for courses preparation. Instructors and students could use the stock of thoroughly selected business area literature for teaching and learning.

The focus of International Business programme was not only on the foreign language as a language of instruction. Other important aspects were application of advanced technology during the delivery of the courses and interactive nature of classes. In fact the programme was the University pioneer in systematical application of PowerPoint presentations, overhead projectors and electronic delivery of class materials to students in advance. The faculty of Business and Finance gave to the programme a priority in use of classrooms equipped with the best multimedia devices. Facilities and equipment of International Business Center obtained from previous TEMPUS and BECA Grants were offered for programme instructors’ benefits. Meetings of instructors and some classes regularly took place at above mentioned premises possessing a great location and latest technology.

FACILITATING FACTORS

The following factors facilitated the process of introducing good practice at NTU “KhPI”:

- image on the market of educational services;
- effect of synergy;
- insight into strategic planning;
- use of marketing approach to promote management education;
- extensive experience of international cooperation;
- collaboration with business.

NTU "KhPI" with 120+ year history is widely known for its traditions and scientific achievements. NTU "KhPI" was one of the first technical HEIs to begin training of economists and managers. International Business programmes offered at the department of Finance still continue to be quite popular among enrollees. University academic staff actively participated in seminars, summer institutes, foreign internships, conferences and researches ran by Consortium for Enhancement of Ukrainian Management Education (CEUME) that made an impact on formation of substantial group of instructors with the corresponding expertise. Along with the encouragement of novel study practices implementation by the University’s top-management it led to the study experiments involving business courses taught in English long before the joint double-degree programme was introduced. It proved

to be enthusiastically accepted by engaged students, who shared their expectations with younger peers. Many students with existing knowledge and skills, who were willing to evolve, chose to engage in such courses.

Economists' training at NTU "KhPI" is developed according to the needs of industrial production and provides a connection between economic and technical education. Graduates of Business and Finance faculty are educated in basic technological processes and understand the specific functional characteristics of industrial enterprises. Critical mass of young creative teachers who are not indifferent concerning the further development of business education at NTU "KhPI" works at the University. They have built an initiative group involved in working out of faculty development strategy. The group is engaged in analysis of business education environment and responding to its changes with the involvement of stake-holders. As a result a client oriented approach is inherent in the process.

Marketing research of educational services and needs analysis of potential clients are done by the University experts. Also special activities promoting business education (such as an "Open House" events) and other Internet-based advertisements are conducted. Based on the results of business world needs survey in 2004 NTU "KhPI" introduced Post Diploma Studies programme targeting executives, which goal was to accumulate expertise, appropriate resources and the reputation required for establishing a highly competitive MBA programme by developing, implementing and maintaining a series of certificate programmes.

Curriculum and academic activities of NTU "KhPI" are orientated toward Western-European education standards. Management education at NTU "KhPI" started in the middle of 90's with the help of international grants. Already in 1995 the curriculum for the first and second year students of our University was adapted to OVGU (Magdeburg, Germany). Because of participation in many long-term programmes financed by the US and EU the University got connected with many HEIs. That resulted in various internship, retraining and continuing education opportunities for faculty members. Lectures provided by international guests and education activities performed by Peace Corp volunteers, whom NTU "KhPI" eagerly hosted for long-term visits, input in preparation of students for studying with native speakers and received positive feedback from those exposed to such teaching experiments.

The core group of University instructors recognized the need of Ukrainian business in English-speaking professionals. The Career Center at NTU "KhPI" organized and conducted annual Job Fairs and Career Week for students, at which former graduates discussed the issues of job search and career development, and business representatives presented their companies and selected students for summer internships. Such cooperation formed reputation of the University as reliable education partner delivering graduates with required language training and set of skills and attracted enrollees searching for suitable learning environment with opportunities to improve English.

CHALLENGES AND OBSTACLES

The following factors were the obstacles of introducing good practice at NTU "KhPI":

- lack of University's autonomy and academic freedom;
- rigidity of higher education system standards;
- unclear ownership of the international education programme;

- different expectations of stakeholders exposed during implementation of the programme;
- different number of study years needed for obtaining of Bachelor degree;
- lack of English speaking administrators and supporting personnel.

The inconsistency of many provisions of legislative and statutory base as to higher education with the Bologna process principles, namely inconsistency between national statutory documents, currently being in force, and provisions of Lisbon Convention regarding terminology base; between national statutory documents and provisions of Bologna Declaration, in particular, concerning two cycles of higher education, structure of degrees, etc.; lack of national statutory documents, which regulate forms and ways of receiving education through life-long learning.

Ukraine's higher education system standards (state standard of higher education, branch standards of higher education and standards of higher education of HEIs) are fixed at the legislation level. It really needs radical changes, mainly simplification of structure and content both on state and branch levels and setting it into conformity to three-cycled higher education model, which was accented in the Communiqué of Berlin summit of the Ministers of Education of European states. The standards must ensure maximum variability of content and structure of training in order to take into account operatively the change of priorities at the labor market. Strict regulation of HEIs in financial sphere and detailed administrative and financial control result in non-equal competitiveness of Ukrainian Universities at the global education market, prevent from implementation of innovative teaching methods and doesn't encourage financial motivation of involved instructors. Number of courses and ECTS credits are dictated by the governing bodies, so local HEIs do not have freedom to change curriculum.

Because of grass roots initiative ownership of the international education programme is unclear. This causes reluctance in problem resolutions as involved staff and administrators may be unwilling to accept responsibility. As the programme evolves new features appear and priorities may change. But it may cause dissatisfaction of some stakeholders, whose expectations hasn't changed, or were different from the common ones. Proper illustrations of this fact were tangible rewards, which were promised to the participating in the programme instructors and were awarded to them at the beginning, but later such practice was halted because of the budget considerations. Also other incentives announced at the beginning of the programme implementation were never realized. Some instructors were expecting at least verbal or written recognition of their efforts, while its absence was manifesting the ambiguousness of their appreciation. All these led to trained instructors leaving the programme and teaching quality going down in some cases.

Standard number of years in Ukrainian HEIs needed for completion of Bachelor study is 4 years unlike in majority of EU Universities. That caused some problems with receiving of diplomas by inward mobility international students. There is striking difference in quantity and volume of courses offered by EU and Ukrainian HEIs, e.g. only 2-3 ECTS credits are attached to the majority of Ukrainian courses in comparison with 4-6 credits attached to European ones. Local Universities contain too many humanity courses in their curriculum, which are usually studied by EU students in High School or are supposed to be studied independently. Thus the discrepancy in number of required years of study caused additional

changes in curriculum that were time-consuming and needed state approval.

Lack of English speaking administrators and supporting personnel at department, international student office and dean's office levels makes international students' experience less comfortable as it requires engagement of volunteer interpreters for the resolving of day-to-day issues such as accommodation, subsistence etc. Such interpreters are not always available, majority of them lack interpreting experience and soft skills that causes miscommunications. Customer service standards at the named levels significantly differ from those, to which incoming students are used to. That complicates relatively easy situations and affects general perception of study abroad experience. The only visible solution is to provide financial rewards to these administrators and supporting personnel to stimulate learning of English and improvement of soft skills, but as majority of them are middle-aged and elderly people they lack enthusiasm and time, and strict state regulation of HEIs' financial sphere complicates the stimulation process.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Although Engineering and Physics faculty was the first to introduce courses in English at NTU "KhPI", International Business programme was definitely an innovative practice in the context of business education. The main differences with the former were the fundamentals of the programme. Its pioneering aspects were strong emphasis on active learning, student-centered way of teaching, international business practice study. Obviously, European countries started to offer economic and business education programmes in English on undergraduate and graduate levels long before our University did it. However, NTU "KhPI" was the first to implement such programme in Kharkiv region. Its announcement caused many negative remarks at the beginning. Naysayers stated it would be a failure because of inability to attract sufficient amount of enrollees ready to learn in English, aversion would be caused by additional complexity of such way of learning, curriculum changes would require tremendous efforts and instructors with proper background would be nowhere to find.

As the named programme evolved such talks vanished, and other Universities started to copy this practice upon contemplating its success. One of the most effective approaches applied in this programme was to join the best academic staff from different departments and faculties, who had international projects experience and studied or had an internship at Western Universities. Apart from that the main criteria of inclusion into instructor group were English proficiency, team-work ability, and willingness to learn new teaching methods, and share international academic experience. At the beginning mainly advanced business courses were provided in English because of higher concentration of business academicians with appropriate set of skills. In order to develop the programme different aiding activities were provided by the core group, which were described in details in Wider Context and the Process of Introducing Good Practice sections (i.e. Teaching Excellence Programme, summer schools etc). To a great extent such quantity of English-speaking instructors with high level of teaching expertise emerged due to numerous Tempus projects, in which our University actively took part.

SUSTAINABILITY OF THE GOOD PRACTICE

At the beginning only International Business programme offered teaching in English at NTU "KhPI". Several years later Management (undergraduate courses were taught in English) and

Finance (courses provided during first two years of study were taught in English) programmes decided to introduce similar offer upon observing increasing number of students choosing the particular programme. Investment Management (courses provided during first two years of study were taught in English) programme was the last to jump on the band-wagon.

Because of this programme NTU “KhPI” students received an opportunity to learn professional English, to study at European Universities, to obtain double-degree diploma (Bachelor of Science in Management from NTU “KhPI” and Bachelor of Science in International Business and Economics from OvGU), to communicate with peers from abroad through modern devices, to learn cooperatively, and to participate in joint research projects during international summer schools. Due to that our students obtain international experience while studying and gain competitive advantage comparing to those, who are not exposed to such practice. That improves the employability and increases their chances for jobs with higher initial salary.

The International Business programme is a good example of sustainable project, which is not some kind of spin-off originated from USAID or EU-funded project. It is neither financed by special grant and national government, nor is a top-down initiative. The lifespan and growing impact of the programme confirm its sustainability. However, mobility flows are unbalanced as incoming mobility is lower than outgoing mobility. On the other hand, no EU country has yet implemented a comprehensive strategy to tackle all aspects of student mobility.

The success of the programme causes more interest from other international partners, revives stand-by partnerships and generates new global contacts. At the moment University of Klagenfurt and Carinthia University of Applied Sciences (Austria), Technical University Hamburg-Harburg (Germany), Khristianstad University and Linnaeus University (Sweden), and Ecole Polytechnique (France) expressed their interest in activating student mobility with NTU “KhPI”. Another striking example of the programme sustainability is its duplication by the majority of Kharkiv region HEIs as it always happens with successful practices. Basically, NTU “KhPI” paved the way and served as education market leader with innovative product.

TRANSFERABILITY OF THE GOOD PRACTICE

The key points of international education programme transferability are the following:

- strategizing;
- identification of primary international partners;
- making it interesting for the participants;
- immediate implementation;
- enabling quality assurance mechanism;
- permanent search for improvement opportunities.

It's important to set clear goals, priorities, rules, procedures and strategy and make sure all of that is communicated to the stakeholders. Plan your activities, but make sure the plans are not too rigid and adaptable to changes. Quality assurance process demonstrates progress status. Upon receiving of initial results check if you're at the place you wanted to be. If not, make needed changes. In order to identify key international partners take a look at the long-term partnership and check for similarities in their plans and strategic goals. It's

possible to engage new partners, but long-term ones are already used to the peculiarities of your institution operation. With new partners adaptation to such features may take some time.

Stakeholders' expectations should be met, so the follow-up on incipient declaration of intentions is needed. Such motivators as engagement in international activities, internships abroad, international research experience, opportunities for professional and personal growth, and possible promotion usually work quite well. It's important to involve an effective project team with diversified background. Success will draw more participants as soon as the first results will be publicly available. So publicity also should be taken care of.

Innovative practice implementation is always complicated, because familiar schemes and templates are not applicable. Therefore, it makes sense to start realization process upon completion of planning stage and team formation. Obviously, some widely-used operation pattern will work. Empirical approach can provide feedback required for the do's and don'ts list. Quality assurance mechanism assists in management on weak signals as the team interprets observation. Kotter's or other change leadership models could be used as guidance.

LESSONS LEARNT AND RECOMMENDATIONS

The core group of instructors collaborated quite efficiently. Its main feature was that people with different background but proper teaching and research expertise managed to cooperate and resolve issues rather effectively, recognized each other's efforts and welcomed newcomers. The versatility of this group, ability to engage onlookers, leadership and teamwork skills were the keys to successful implementation of the International Business programmes.

Another successful innovative practice was feedback provided by students through anonymous course evaluation within the framework of Teaching Excellence Programme. Although it's a standard practice in Western HEIs, no one applied it before at NTU "KhPI". Obtained data served as a primary source for determining the ways of education quality improvement. Evaluation form questions reflected aspects of teaching that were essential for further enhancement of undergraduate International Business programme. Instructors handed out evaluation forms to the class they didn't provide courses to. Final instructors' scores were available only to them for identification of professional growth areas. Outputs in generalized form containing no personal scores were provided to administrators (heads of the departments, dean's office, etc.).

The International Business programme promotion campaign could be executed better. Currently there is a lack of written information improving outreach of the programme. Target audiences usually learn about it through experience sharing by the alumni, personal contacts with the programme core group, prep talk of dean's office representatives made for enrollees, presentations at the conferences. Also no sufficient information published on web-site is publicly available to interested international students.

Another lesson we learn with the programme development is that extensive growth could be a challenge. Successful implementation of the programme captivates new instructors

willing to be a part of a big event. Although new participants are welcomed, insufficient attention is given to them because the core group is overwhelmed with other on-going issues. Therefore, it is important to know that serious efforts should be made to help novice instructors to adapt, to explain them what makes you idea-driven and to make them feel like part of the team.

The main advice would be to start realizing your ideas as soon as you do proper planning and strategizing. Procrastination diverts people's attention onto routine and more familiar actions, deflates inspiration momentum and makes people think of possible failures. If you are really inspired with a concept, don't wait for the guidance from your superiors and national governing bodies as red tape takes down lots of bright projects. Make your own moves, convince colleagues around you, reach for those in the external environment, and engage people who think alike. Even if not all the details are clear, the solutions will come in the process.

CONTACT DETAILS

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13. Novel Approaches to the Design and Implementation of Dynamic Curricula Based on University – Industry Cooperation Models

State Engineering University of Armenia (Polytechnic), Armenia

EXECUTIVE SUMMARY

The wider objective touched upon below, comes to the problem of assurance of high quality engineering education in line with the rapidly growing environmental challenges. Particularly, it deals with such two crucial aspects of the problem as "out-dated curricula and teaching/learning methods", and "irrelevance of graduates' skills to labour market needs". The last decade experience of State Engineering University of Armenia (SEUA) shows that one of the most efficient ways to solve the problem runs through the establishing close university-industry cooperation aimed at the wide involvement of employers' human and technical resources into the curricula development and teaching organization processes. It contributes essentially to well-designing, regular monitoring and periodically reviewing of study programmes, thereby securing their continuing relevance and currency.

The presented case study is sharing the SEUA experience through introducing two essentially different types of successful university-industry cooperation models aimed at the above mentioned objectives: the first model concerns the case when the "university goes to the industry", and the second, vice-versa case, when "the industry comes to the university". In the first case, in order to address the challenges, a good example of SEUA productive cooperation with industrial partners is organized through the SEUA Interfaculty Chair of Microelectronic Circuits and Systems, which operates in the premises of SYNOPSIS-Armenia CJSC. Together with Synopsys, Inc., SEUA implements a University-Industry educational model since 2001 that has proven to be effective in educating and graduating qualified specialists. It prepares highly qualified engineers in the field of VLSI (Very Large-Scale Integration) design and EDA (Electronic Design Automation) who will meet the specific requirements of semiconductor and IT companies.

In the second case, SEUA and National Instruments (NI) have come together in a joint initiative to establish modern high standards Armenian National Engineering Labs (ANEL) at SEUA. A massive upgrade and introduction of new equipment and technologies will be conducted at the planned ANEL with regard to covering the main disciplines of the most of major educational areas, as well as research at the SEUA. This is expected to improve the SEUA laboratory infrastructure to match with contemporary engineering education requirements, to modernize curricula and trigger high-tech industry sector growth in Armenia.

BACKGROUND INFORMATION

SEUA is the legal successor of Yerevan Polytechnic Institute, which was founded in 1933 having only 2 departments and 107 students. The institute grew along with the Republic's industrialization pace and in 1980-1985 reached its peak with about 25,000 students and

more than 66 majors, becoming the largest higher education institution in Armenia and one of the most advanced engineering schools in USSR. In 1991, the Yerevan Polytechnic Institute was reorganized and renamed State Engineering University of Armenia (SEUA). In 2005, by the Resolution of the RA Government the traditional name “Polytechnic” was returned to the University as an acronym.

At present SEUA has over 10 thousand students. The number of academic staff exceeds 850, most of them with doctoral degrees. Today the University in its central campus located in Yerevan and the Branch Campuses – in Gyumri, Vanadzor and Kapan, accomplishes 4 study programs of vocational, higher and post-higher professional education, conferring the qualification degree of junior specialist, bachelor, master and researcher (PhD). Besides the degree programs, the University also offers extended education courses by means of its faculties and a network of continuing education structures. The specialization scope of the University includes all the main areas of engineering and technologies represented by over 75 Bachelor’s and Master’s specializations in Engineering, Industrial Economics, Engineering Management, Applied Mathematics and Sociology, offered by its 20 faculties.

During 80 years of its existence, the University has given nearly 120 thousand graduates who have contributed greatly to the development of the industry forming once powerful engineering manpower and technology base of Armenia. With its developed research system and infrastructure the University is nationally recognized as the leading centre in technical sciences.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

During its 80-year history SEUA has created some stable values and traditions, which united several generations of the faculty and students and defined its unique “Polytechnic” character. Committed to its polytechnic roots, SEUA shall ensure continuance of the best polytechnic traditions and values, to create a climate, where new ideas and traditions of the past interact and enrich each other, whilst maintaining the identity and stability of the University. Over the decades, Polytechnic has followed a basic teaching philosophy - to teach theory through practical problems and applications, which has brought about stable success and recognition to the University and its graduates. Broadening its disciplinary range and introducing new attributes of liberal University education, the University will maintain and develop this approach in teaching.

On the other hand, the quality of study programs continues to be a high priority for the University, which stipulates, to a greater extent, the external competitiveness of the institution and employability of its graduates. Since SEUA moves toward the integration in the European Higher Education Area, the European standards of educational quality are the main guidelines for the University. The University should streamline all of its educational, research and innovation processes towards the development of a dynamic and stimulating learning environment.

Today the University aspires to become an institution, where entrance and educational resources are accessible to diverse social and age groups of learners, to both local and international students, as well as to become an institution, which is guided by global

prospective and moves toward internationalization and European integration of its educational and research systems. SEUA has unique preconditions to become again one of the leading exporters of engineering education in the region

THE WIDER CONTEXT

The SEUA Strategic Plan (2011-2015) states the continuing needs in the curricular renovations and the replacement of outdated equipment of teaching and research labs throughout the University to respond to the changing realities and challenges of ongoing technological revolutions [6]. SEUA realizes that without collaborative initiatives with its industrial and research partners, it is not possible to create a contemporary technological environment for engineering education. This generated the following strategic objectives:

- to initiate a gradual curricular and structural renovation process of study programs in accordance with the requirements of the employment market and the European curricular standards;
- to develop and update the educational and research equipment base of the University consistent with the quality standards in teaching and research and their development needs;
- to expand and strengthen partnership relations with business and industrial organizations.

The quality of academic provision of a university largely depends on the quality of its study programmes: how they are designed, approved, and evaluated. According to the ESGs (Standards and Guidelines for Quality Assurance in the European Higher Education Area) “Institutions should have formal mechanisms for the approval, periodic review and monitoring of their programmes and awards”. Currently often the procedures and mechanisms for designing, approval, monitoring and review of study programmes are not clearly defined in higher education system of Armenia: such procedures are neither defined in institutional nor in system levels. If they exist, they have a voluntary nature and vary largely from institution to institution and are guided for the most part by the established academic traditions in the university.

Moreover, the design process of study programmes is not based on the intended learning outcomes of the programme; it is oriented more towards the content incorporated in the programme courses and sometimes personal preferences of teaching staff. It is carried out with no consultations with professional bodies, representatives of the labour market/employers and other external stakeholders. The programme approval decisions do not fully consider academic standards and appropriateness of learning resources; monitoring of programmes (if any) does not measure real effectiveness of programmes and the review processes – their validity and relevance. Well-designed programmes facilitate successful delivery of the intended learning outcomes, and can assist in the successful operation of later approval, monitoring and review procedures. Proper design and development of a programme is crucial for ensuring that it is relevant and sustainable.

The external relations of a university should contribute most to the achievement of defined strategic goals through comprehensive development and strengthening of partnerships and communication with all its stakeholders. Both of the introduced university-industry cooperation models, in parallel with the update the educational and research equipment

base of SEUA consistent with the quality standards in teaching and research, intends to ensure the development of priority well-designed programmes based on the following basic principles:

- clearly defined aims and intended learning outcomes of the programme;
- reliance on external reference points, including any relevant subject benchmark statements, international reference points, national qualifications frameworks for higher education and the requirements of employers;
- definition of the opportunities which might be available to students on completion of a programme;
- due balance of the programme in relation to academic and practical elements;
- due coherence of the programme, to ensure that the overall experience of a student (acquired learning outcomes and competences) is relevant to the defined purposes;
- definition of means by which intended learning outcomes of the programme will be promoted, demonstrated and assessed;
- identification of necessary resources available to support the programme.

In order to address the listed challenges and to accelerate innovation in the global electronics market, in 2001 SEUA, in conjunction with Leda Systems Co., has created and implemented a University-Industry educational model, which in 2004 was successfully continued and developed with SynopsysInc – the legal successor of the Leda Systems in Armenia. Training of highly-qualified specialists in the field of microelectronics has several unique aspects which pose special challenges to the existing higher education system worldwide. There is a disparity in the rate of change between industry and academia. Students must be able to apply theoretical knowledge to develop practical skills. Computer hardware and software for engineering instruction is expensive and often unattainable by universities. The latest industrial technology is usually unavailable to the higher education institutions. These factors create barriers to effective, efficient education of engineers for the microelectronics industry – ultimately affecting the competitiveness of countries that want to develop technical industries.

A. Disparity of the dynamic rate of change between the semiconductor industry and educational system.

Over the past 40 years, the development of the semiconductor industry has shown very high rates of dynamic growth. This situation is vividly reflected in Moore's law [1] which states that the number of transistors available in a semiconductor integrated circuit (IC) doubles every 18 months. Currently, the number of transistors in advanced microelectronic ICs already surpasses 1 billion. The unprecedented pace of development of the semiconductor industry has been reflected not only by the change of IC complexity, but also by other basic parameters. For example, the IC clock frequency has increased from tens of Hz to tens of GHz; the capacity of memories has multiplied from KBs to TBs; power consumption has risen from watts to kilowatts; power density has reached several thousands of W/cm²; the gate length of CMOS transistors has shrunk down to 22 nanometers from several microns [2].

All these advancements and more have been obtained through the application of constant technological breakthroughs in IC fabrication processes. The ICs of a few years ago had feature sizes measured in microns while today's microelectronic ICs and prototypes can sport feature sizes of 65, 45 and 32 nanometers – made a reality by progressive new

technologies. Every transition to a new IC technology – called a node – is considered a “revolution” in the semiconductor industry.

At each transition, the significance of different physical phenomena occurring inside the IC was amplified, requiring essentially new methods of IC design as well as corresponding new Electronic Design Automation (EDA) tools. For example, the role of leakage currents up to 0.13 μ m technology node was rather small. With each subsequent technology node, the importance of leakage current gradually increased and has now become critical. Besides leakage, challenges that have intensified are: constantly increasing effects of interconnects, noise, crosstalk, and power consumption. These challenges drive the industry to constantly search for new ways to increase yield, reliability, manufacturability, reduction of power dissipation, and time-to-market. It is especially worth emphasizing that the period of time to each transition into a new technology node is becoming shorter. In particular, it took only several months to move from 90nm technology into 65nm. The implication is that the period of time to understand and solve the challenges of new technologies for IC design, fabrication, and testing, as well as the creation of corresponding new EDA tools, is also decreasing.

Summarizing:

1. Microelectronics is one of the most dynamically changing industries.
2. Dramatically rapid changes occurring in semiconductor technology require frequent corresponding changes to the tools and methods used during IC design, fabrication and testing.
3. Addressing the challenges in microelectronics requires high-quality, well-trained engineers and continuous renewal of their education.

While the microelectronics industry evolves rapidly, the corresponding education system has constraints on its flexibility. The speed of improving the knowledge of engineering students does not always coincide with the rate of microelectronics advancement. The higher education system has boundary conditions such as the huge workload involved in creating new curricula and educational materials, difficulties of organizing the training of appropriate lecturers and students inside and outside the premises of the university, and budgetary considerations. The result of these conditions within the education system is an incompatibility between the pace of the new developments in microelectronics and the education of microelectronic engineers.

B. Necessity to combine theoretical knowledge and practical skills

The combination of fundamental knowledge and practical skills is especially important in microelectronics. IC technology advancements are achieved mainly by the research of new physical phenomena, creation of models which represent new principles, development of new algorithms, and grasp of other theoretical issues. It requires mastering profound theoretical knowledge of specialists involved in the field. Simultaneously, the success of IC design is mainly enabled by skilled use of state-of-the-art EDA tools, new methods of measuring IC parameters, and new methodologies in design flows. EDA tools, in turn, also become more powerful at a brisk pace, and qualitative changes occur with each new IC technology node. Without mastery of the new EDA tools and design methodologies, microelectronics specialists face significant difficulties in achieving success in the semiconductor industry.

The successful microelectronics engineer must be well-educated in theoretical profound knowledge of semiconductors and simultaneously have acquired practical skills in using modern tools and methods. Creating EDA tools themselves also requires well-trained engineers with a strong understanding of semiconductor theory as well as practical experience using modern tools.

C. Unattainability of computer hardware and software to universities necessary for microelectronics education

Computer hardware with powerful calculating capabilities that runs complex EDA tools is used in IC design. The hardware, its software, and the EDA tools are quite expensive on the open market. In general, the high cost of putting an infrastructure in place for microelectronics education is prohibitive. Educational institutions can have limited budgets, putting the hardware and software needed for an engineering program out of reach.

D. Inaccessibility of current technological information to educational institutions

It is impossible to implement studies of IC design and test, techniques for creating EDA tools, and IC fabrication-related issues without the use of appropriate technological information in microelectronics. Particularly, this need refers to the models of various electronic components, design rules, standard digital and I/O libraries, intellectual property (IP) blocks, and design kits [3]. The lack of such technological information in educational process does not allow the specialists-in-training to become fully proficient in all the areas of contemporary microelectronics. Universities lack all the mentioned capabilities because of various objective conditions.

Thus, the motivation for Synopsys, Inc. and SEUA to establish a University-Industry educational model stemmed from the issues observed between the semiconductor industry and educational institutions such as: the extreme necessity for engineers to combine theoretical knowledge and practical skills, the lack of available computer hardware and EDA software in universities, the inaccessibility of semiconductor technology information to educational institutions, and so on. Synopsys also provides industry-leading EDA tools and resources for teaching and academic research to numerous universities around the globe through the Synopsys Worldwide University Program. By using Synopsys products in learning environment students receive hands-on experience and graduates are able to quickly learn valuable skills needed when entering the Electronics industry.

Coming to the second model context model it should be mentioned that the growing market of off shored engineering services on one side, and Armenia's traditions and current capabilities on the other side, provide opportunities for Armenia to penetrate global markets for engineering services. According to the US National Science Council's Key Science and Engineering Indicators-Digest 2011 the global expenditures on engineering R&D accounted about 1 trillion USD which have been doubled during the last decade. The intensified search for young talent and access to market insights drives the global companies internationalize their R&D activities which are also evidenced in several research reports (Booz Allen Hamilton and NASSCOM (2006), McKinsey (2005) etc., The 2009 EU Industrial R&D Investment Scoreboard (2010)). They also forecast that this development trend will keep the pace in the future as well. Main market components of engineering services sector are the engineering services provided by specialized companies as well as research and

development (R&D) activities performed by industrial companies. Sectors such as mechanical engineering, electronics and chemical industry are tended to internalization at the most part. The feasibility analysis identifies an opportunity for Armenia to become an engineering R&D centre for second-tier multinationals (current experience: National Instruments, ST Engineering, MIKA Progress tech, Cambric, Microsoft, Nokia, etc.). Moreover, Armenia has a unique opportunity to become a leading exporter of engineering technologies, products and services. These, however, require a deliberate approach to develop missing and upgrade the existing capabilities especially in the field of human capital reproducing.

Aimed to these long-term global objectives, and at the same time, taking into account that, as the leading technological University of Armenia, SEUA has a unique role and responsibility for reproduction and development of engineering workforce, the State Engineering University of Armenia (SEUA) and National Instruments (NI) have come together in a joint initiative to establish a modern high standards Armenian National Engineering Labs (ANEL) at the SEUA. A massive upgrade and introduction of new equipment and technologies will be conducted at the planned ANEL with regard to major disciplines covering 6 major educational areas as well as research at the SEUA. It will essentially update and improve the SEUA laboratory equipment base to match it with contemporary engineering education requirements and trigger high-tech industry sector growth in Armenia. The ANEL will enable the SEUA students gain basic and advanced knowledge and skills in engineering through intensive practice use of modern engineering equipment and technologies.

The challenges to be addressed with the ANEL project come to the following:

- outdated laboratory equipment and need to modernize engineering curricula in Armenia;
- increasing demand for Armenian engineering talent of engineering technologies;
- Armenia's chance to become an exporter of engineering technologies products and services to the global market.

In long-term perspective, the establishment of the ANEL will have both economic and social effect, including enhancement of technology and innovation in the country, creation of a substantial number of high-quality specialists and well-paid jobs, prevention of the emigration of talented youth as well as stimulation of engineering start-up creation.

The ANEL is expected to have broader outcomes, in terms of increased reputation of SEUA, new engineering start-ups, pool of proficient engineering workforce, strong presence of engineering scientific research and commercial applications development and establishment of effective collaborative networks between the SEUA and the industry. The wider impacts can potentially include increased employment and sales in engineering and related fields, opportunities for engineering service exports and spread of new knowledge and technologies within other sectors of the economy. Furthermore, there can be a precedent and benchmark for upgrade of local education in other disciplines, knowledge-intensive clusters may emerge and there will be increased opportunities for the repositioning of the economy and diversification.

RATIONALE AND INTENDED RESULTS

As it was shown above for the first considered case, there exist the following 4 key reasons

that require the creation and application of a new educational model for educating engineers in the field of microelectronics:

- disparity between the dynamic rate of change of semiconductor industry and educational system;
- necessity to combine theoretical knowledge and practical skills;
- unattainability of computer hardware and software to universities necessary for microelectronics education;
- inaccessibility of current technological information to educational institutions.

It also was mentioned that, this is especially true in regions of the world where the semiconductor industry requires a skilled workforce and countries are striving to be more competitive in technology. The basis of the new model should be tight cooperation between the leading semiconductor industry companies and universities of the region. Only through this model is it possible to provide the semiconductor industry companies with highly-qualified specialists from the educational sphere. That is why the cooperation of SEUA, as the leading technical educational centre of Armenia, with the Armenian branch of Synopsys, Inc., one of the worldwide leading companies in the field of microelectronics, has been well-motivated from the beginning and started to become an effective model for educating and graduating qualified VLSI design and EDA engineers in Armenia.

As key results of fruitful cooperation within the model have been established between SEUA and Synopsys Armenia CJSC, the following achievements have been intended: high appreciation of efficiency and quality of the realized educational programs by Community, qualitative and quantitative rise of SEUA students, involvement of best specialists of microelectronics area in teaching, demand for graduates and high employment percentage, full provision of educational materials, presence of state-of-the-art hardware and software, continuous expansion of scientific-research activities (participation in international conferences, publications, etc.), successful defences of PhD dissertations and involvement of PhD students in teaching.

Regarding the SEUA university-industry cooperation second model, started not long ago in conjunction with National Instruments, in the shape of ANEL Project, the following is worth outlining. As it is stated in the SEUA Strategic Plan (2011-2015), it becomes an urgent need. Also the replacement and renovation of the out-dated equipment of teaching and research labs throughout the University [6]. The rational allocation and use of the University's own resources for this purpose should be supported by collaborative initiatives with SEUA industrial and research partners to establish joint labs or to use together modern industrial equipment. The University realizes that without such cooperation it is impossible to create a contemporary technological environment for engineering education, harmonized with the changing realities. The ANEL project has been developed in result of the SEUA and NI growing cooperation lasting about 10 years, is aimed to contribute to the problem by the filling this niche through establishing more than 30 world-class educational and research laboratories at SEUA. This is expected to improve seriously the SEUA laboratory infrastructure and to match it with state-of-the-art engineering education requirements. It is also expected to have broader impacts with regard to increase in SEUA reputation and expansion of the engineering sector of the Armenian economy.

And finally, in long-term perspective, the establishment of the ANEL will have both economic and social effect, including enhancement of technology and innovation in the country, creation of a substantial number of high-quality specialists and well-paid jobs, prevention of the emigration of talented youth as well as stimulation of engineering start-up creation. It can trigger high-tech industry sector growth in Armenia

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

In order to address the above outlined challenges, in 2001 SEUA, in conjunction with Leda Systems Co., created and implemented a University-Industry educational model and established a "Microelectronic Circuits and Systems" Chair. In 2004, Synopsys, Inc. acquired Leda Systems and has since continued to be SEUA's major educational advocate by contributing to the University-Industry educational model in order to accelerate innovation in the global electronics market. On December 1, 2004, a cooperation agreement was signed between SEUA and Synopsys Armenia CJSC, according to which the SEUA Interdepartmental Chair of Microelectronic Circuits and Systems became a member of Synopsys' Worldwide University Program. The distinctive aspect of this modification of the University-Industry educational model is that classrooms and laboratories are located on the premises of the Company. Students study their 3rd and 4th years of the Bachelor program as well as the Master and PhD programs on the premises of the Company. This modification can be viewed as "University goes to Industry". The passed valuable experience of applying this modification has demonstrated that it is one of the most effective among the existing other university-industry cooperation models.

The essence of the established educational model in Armenia is the following. The aim is training of highly-qualified specialists who will meet the qualification requirements of semiconductor industry companies. Studies in all educational programs are anticipated: Bachelor, Master, PhD. Studies include the VLSI Design and EDA specializations. Students obtain their basic education (mathematics, physics, etc.) in the first years of the Bachelor program in the University. After acquiring a basic technical education (after the 4th or 5th semester), the best students are selected on competitive grounds to participate in the joint Industry/University educational program. Further education in the Bachelor program as well as Master program and PhD studies is conducted using specially-developed curricula. Curricula is developed taking into consideration the contemporary requirements of leading companies in the semiconductor industry, along with involvement of the area's best professionals and professors and oriented to the use of Synopsys EDA tools.

Studies are carried out in specially-equipped classrooms donated by the Company (located in the premises of the Company or University) where every student has the necessary state-of-the-art hardware and an opportunity to use the donated EDA tools. Teaching as well as supervision of course projects, diploma works, Master theses and PhD dissertations are anticipated to be realized jointly by the leading professionals of the Company and experienced professors of the University. Diploma works, Master theses and PhD dissertations are directed to be close to the actual projects accomplished in the Company. The described University-Industry cooperation model is illustrated in Fig.1.

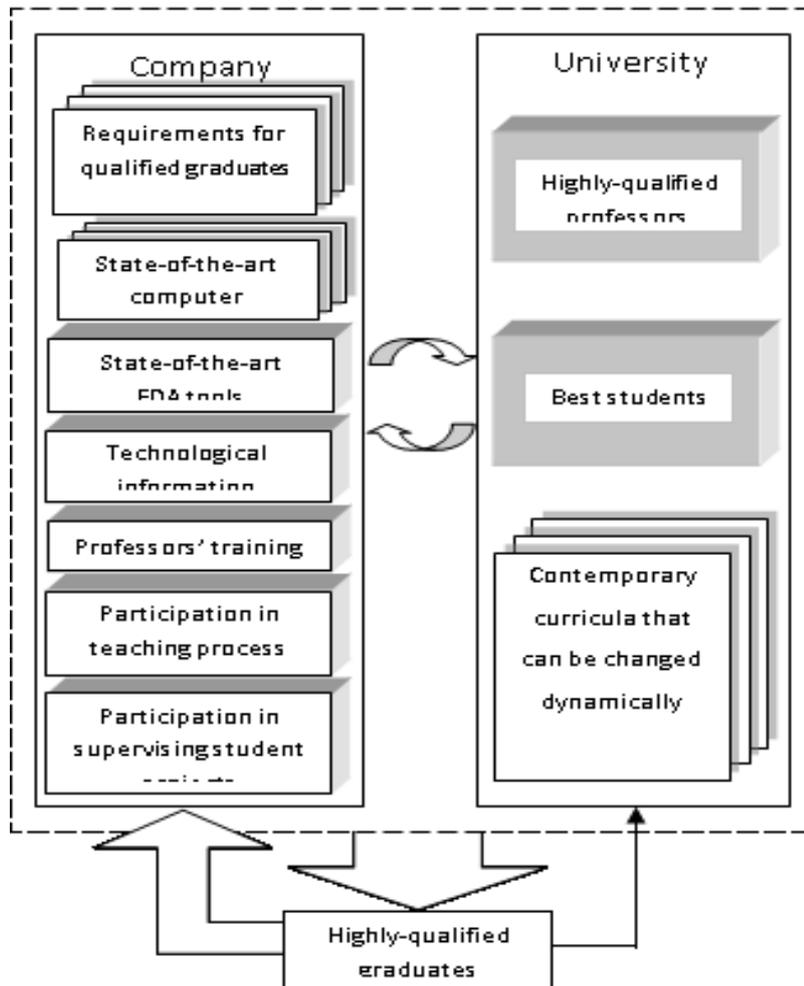


Fig. 1 The SEUA – Synopsys Armenia educational cooperation model.

Within the frame of the established university-industry liaison model SEUA considers all the aspects related to the quality of programme paying especial attention to: programme and curriculum design and its content, availability of appropriate learning resources, monitoring of the progress and achievements of students, regular feedback from employers, labour market representatives and other relevant stakeholders and participation of students in quality assurance activities. University limitations regarding the educational process are considered while developing the curricula. Total numbers of classes per semester, number of weeks per semester, ratio of hours of different types of studies such as lectures, practice classes, and laboratory works have all been taken into account. However, in the case of this model, the University did not present very strict limitations to the Company. Also, it was assumed that in addition to compulsory subjects, the Company could also create some extra classes, for example, the study of EDA tools, contemporary programming languages, etc. This also was relevant to organizing studies in Master and PhD programs. The involved students have an opportunity to obtain individual learning which would offer another opportunity to achieve Company/University mutual benefits.

Over the 12 years since this educational model has been implemented, it has had considerable success. As of today, 325 students have graduated from the program. 100% of graduates work for Synopsys or other local IT companies. Approximately 70% of the program graduates work for Synopsys Armenia. Students of SEUA are also actively involved in their

community by participating in corporate social responsibility activities such as visiting orphanages, tree planting and hosting or participating in a variety of intellectual competitions.

The SEUA "Microelectronic Circuits and Systems" Chair has created a complete set of full educational curriculum. The Synopsys Worldwide University Program provides access to over 125 full semester courses for Bachelor and Master degree programs (59 of which are used in SEUA classes). Curricula developed by the SEUA "Microelectronic Circuits and Systems" Chair are used by the world's leading universities in over 45 countries. These educational materials are available in 4 languages (Armenian, Russian, English, Chinese) and are posted on the Synopsys University Program web page.

Students studying at SEUA are encouraged to attend and submit their research work to conferences such as IEEE East-West, Design & Test (Ukraine), Problems of Developing Advanced Microelectronic Systems (Russia), Asia-Pacific Conference on Postgraduate Research in Microelectronics & Electronics (India), Electronics (Bulgaria), Moscow-Bavarian Joint Advanced Student School (Germany, Russia), Electronics, Telecommunications, Computers, Automatic Control and Nuclear Engineering (Montenegro). In the past 5 years, 12 student papers have been presented at various conferences, 5 of which have received the conference "Best Paper" Award.

Students are also actively involved in SEUA research activities with Synopsys and other international organizations such as EU Terminator, TEMPUS projects, the Black Sea Economic Cooperation Organization (BSEC), and the Armenian-Belarusian research. The results of the scientific research – various integrated circuits and intellectual property nodes, Educational Design Kits [4], EDA tools – are widely used in many of the world's leading universities. 100% of the 20 PhD graduates from the SEUA program successfully defended their PhD dissertations and now all currently work at Synopsys Armenia. Nine of these PhDs also teach at SEUA.

SEUA students significantly contribute to preserving and enhancing the quality of professors and students of SEUA "Microelectronic Circuits and Systems" Chair, by helping to regularly update educational materials to keep pace with rapidly changing industry requirements. As it was mentioned, the developed comprehensive and high quality curricula [5] are anticipated for 2 specializations – VLSI Design and EDA. Classes in Bachelor and Master Programs are anticipated for each specialization. Specialized courses in Bachelor Program are anticipated only in 5-8 semesters. And Master Program mainly includes specialized courses. The total number of hours in the Master program is smaller than in the Bachelor Program as more attention is placed on individual student work such as the Master thesis. The curriculum includes basic and large volume courses as well as a number of elective courses for VLSI Design and EDA specializations.

All the courses have full methodical materials - syllabus, lectures, labs, homework, exams, etc. The curriculum of VLSI Design is oriented at training such specialists who will be able to design contemporary ICs, IPs, digital standard cell and I/O libraries as well as special I/Os (SSTL, HSTL, LVDS, MLVDS, USB, DDR, etc) using Synopsys EDA tools. The EDA curriculum is oriented at training such specialists who will be able to create different types of EDA tools

(for digital circuits - synthesis, simulation, place and route, physical verification, etc., for analog circuits - simulation, physical design, layout verification, etc. as well as design for manufacturing (DFM), design for test (DFT), etc).

Scientific seminars are anticipated in the last 2 semesters of the Master Program, which allows discussion of the problems with accomplished faculty in the domain of their Master Theses. All the basic and large volume courses include course projects and works which are carried out by the use of Synopsys EDA tools. All developed curricula meet the requirements of leading microelectronics companies and can be applied not only for students' study, but also for retraining specialists. The courses are modular in structure which means that they can be used in their entirety or selected components can be used to augment existing programs or used as the base to create a completely new course.

The SEUA "Microelectronic Circuits and Systems" Chair has created a complete set of full educational curriculum. The Synopsys Worldwide University Program provides access to over 125 full semester courses for Bachelor and Master Degree programs (59 of which are used in SEUA classes). Curricula developed by the Chair are used by many leading universities in over 45 countries.

The second approach to the establishing a model of partnership between University and Industry is presented by the example of SEUA and National Instruments (NI) collaboration. The cooperation started in 2005, when SEUA and NI Armenian branch established a LabView training laboratory at the SEUA, which is successfully functioning up to date. NI has also provided computing equipment, license packages, etc. The co-operation has further involved several disciplines ranging from the provision of equipment for SEUA students' diploma theses to student internship at NI and even training for SEUA lecturers. Nowadays SEUA and NI collaboration, except of the global ANEL project to be considered below, includes quite unique "Engineering starts in high-school" project as well.

Furthermore, SEUA and NI have been cooperating with educational institutions globally. NI is committed to enhancing engineering education worldwide by providing graphical programming software such as LabVIEW and modular hardware to bring together SEUA experience theoretical concepts and real-world applications.

Among the existing during the past years partnership fields the following activities can be stated:

- implementing NI Courses (LabView, PXI, RT, FPGA, etc.) for SEUA students;
- providing practical placements and supporting research works (BS, MS, PhD) of students;
- drawing into "Engineering starts in high-school" project talented high-school students;
- short term trainings for SEUA academic staff;
- other partnership activities of NI with SEUA students and professors.
- The quantitative indicators that sum up the achieved results so far of the partnership are the following:
 - high-school project (group of 90 high-school students);
 - more than 160 students passed NI courses;

- more than 200 students passed practicum;
- more than 70 students did BS and MS works;
- more than 20 professors passed advanced training.

Furthermore, SEUA and NI have been cooperating with educational institutions globally. NI is committed to enhancing engineering education worldwide by providing LabVIEW graphical programming software and modular hardware to bring together SEUA experience theoretical concepts and real-world applications. Based on such background SEUA and NI have come together to develop their collaboration base and progress to full strategic partnership [6]. This will evolve around the establishment of modern high quality engineering national laboratory hub and related facilities. The laboratory will be comprised of about 30 specialized and universal educational and research laboratories covering many major disciplines taught at SEUA. Particularly, it will enable the undergraduate, graduate and postgraduate students to implement their theses, gain vital practical experience and form a competent and qualified human resource pool for local/foreign engineering companies. In addition the aforementioned establishment will arguably make the Armenian engineering sector globally competitive, attracting best practice worldwide.

To realize all these ideas the ANEL joint project [7] has been developed and started. Key advantages of the ANEL come to the following:

- state of the art laboratory equipment, a major part of which is based on the technologies of the world leading company National Instruments;
- coverage of most of priority engineering areas of SEUA;
- cost effective: one laboratory will be used by different disciplines;
- combination of education and university research;
- ease of access: being located in short distance from major universities.

Among the complex aspects of ANEL project a special role is given to its Educational programme, which is outlined in the following way:

- the ANEL programmes and initiatives will include engineering education, laboratories, and research projects connected with universities' educational program;
- the ANEL for engineering education and research will be actively engaged in developing a collaborative effort with other Colleges, Universities and other interested units;
- the ANEL will offer courses and programs that complement ANEL's mission of being the premier provider of educational, training and related services in all areas of engineering specialization.

An enhanced pattern of the use of laboratories will be designed by the SEUA to balance the needs of various ANEL users ranging from SEUA students of different degrees to researchers and to commercial applications. It is understood that majority of the laboratories will be directly involved in the educational program (i.e. the lab-work will be included in the students' educational timetable). Furthermore, additional opportunities will be created for those students who want to further their knowledge and skills in labs-related activities. During pre-specified hours the students will be enabled to use the equipment for voluntary studies. In addition, students may collaborate with other users of the labs such as external

researchers or within the framework of commercial applications. Overall, the active student involvement in the ANEL is expected to increase students' engineering knowledge and skills.

ANEL programmes will include a student-based field case study programme, workshops, consulting services for modern engineering (strong engineering program, laboratories, equipment), economy and local businesses (Small Business Institute Program), the LabView courses (for students, interested persons), the Young Entrepreneurs Seminar, advanced training courses for educators, the Robotics programme, etc.

To fulfil the ANEL description, it is especially worth emphasizing that, as international best practice shows, the most successful engineering labs at the universities actively put their theoretical base and skills into practice by getting engaged in the engineering industry. Certainly, the possible commercial applications do not come to create an unbalance in the usage of the ANEL and human potential to adversely affect educational agenda. The planned engineering services will only potentially add to the knowledge and expertise of both the teaching staff of the SEUA and possible students group involved in the mentioned schemes. The ANEL will enable the SEUA students gain basic and advanced knowledge and skills in engineering through intensive practice use of modern equipment and technologies.

The ANEL Educational programme offerings scheme is illustrated below, in Figure 2.

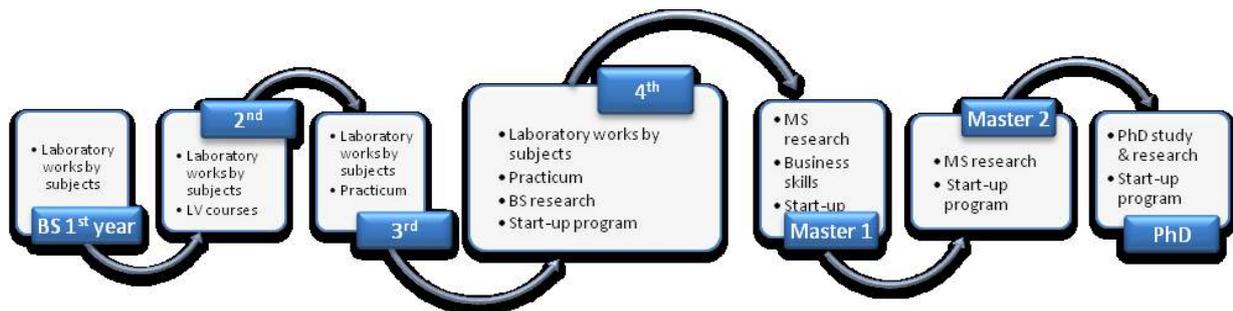


Figure 2 The ANEL's educational programme offerings scheme

The ANEL project is planned to be implemented in a multiple phase strategy. During the first phase, which was assumed to last from 2011 to September of 2012, ANEL was going to strengthen and expand its core elementary offering and build infrastructure and systems for development and establishment.

The objective of Phase One (Strengthening and planning) was to build a team capable of supporting its development plans. This phase also serves as a planning period for ANEL's three major development initiatives. Main activities during this phase include: developing Labs and implementing systems and processes; hiring and training staff; and creating implementation plans for the development initiatives.

To track its progress, ANEL has identified key milestones that must be achieved before moving from Phase One to Phase Two. If any milestones are not met, ANEL will revisit its assumptions and fine-tune its strategy to address the emerging issues. Without going into the details, it should only be mentioned here that because of some objective fiscal realities

this deadline was postponed to September 2013, which is successfully kept. The official opening of the ANEL labs at SEUA is planned for October 2013.

In the second phase, ANEL will execute the development plan with strategic checkpoints planned. The objective of Phase Two (Full-potential execution) is to reach ANEL stable work by 2015. During this phase ANEL expects to be self-sustainability. Growth will be staged with checkpoints, in order to be ensuring the ANEL's strategy is refined as needs. In the process ANEL will test its strategy, develop its regional capabilities. Development plans and strategy will be adjusted as necessary.

The technical design of ANEL has been implemented by NI which has also committed to contribute with operational and other expertise in due course. ANEL will be under SEUA direct governance and there will be designated organizational structure introduced to manage the lab operations. SEUA management of the ANEL will also be supported by a designated advisory board consisting of main stakeholders.

RESOURCES REQUIRED AND USED

Within the frames of the established educational model, Synopsys Armenia CJSC provided the SEUA Interdepartmental Chair of Microelectronic Circuits and Systems with: classrooms, laboratories, Synopsys EDA tools, computer hardware and software, professors' salaries, students' scholarships, professors' training, development of the University's technical infrastructure, and employment offers to students upon successful graduation. Synopsys provided SEUA with 70 complete packages of the company's commercial EDA tools, and the total value of the tool contribution was 350 million dollars. The tools are used in practical, laboratory, diploma works, Master theses, and PhD dissertations. Each student has a PC in the classroom which is connected to the educational network where Synopsys tools are installed. The professors are trained by Synopsys' leading specialists. SEUA provides the curricula and the best professors and students. Selection of students is carried out upon their completing the 2nd year in the Bachelor program from the SEUA following faculties: Computer Science and Informatics, Cybernetics and Radio electronics.

The Armenian National Engineering Laboratories (ANEL) is located on the 4th floor in the SEUA Yerevan campus building #10. The area of each floor is 400 sq.m making in total 1,600 sq.m. As it was mentioned ANEL will be comprised of about 30 specialized and universal educational and research laboratories covering a quite sensitive part of major disciplines taught at SEUA 6 faculties. Some of the laboratories are universal, e.g. materials laboratory could be used for other engineering disciplines as well. A designated fundraising mechanism has been developed to finance the establishment of the ANEL. This was implemented via investments from 3 various sources (RA Government, SEUA. and USAID Armenian Office) for specific parts of the ANEL with well-established correlations and commitments. The whole project cost came more over 6.5 million USD. It is expected that after three years of the project ANEL will achieve a certain level of financial self-sustainability. The potential revenue sources will become: delivering certification and advanced training courses, delivering consultancy/mentoring/coaching, providing engineering services to private sector, and joint research projects with private sector/ other universities/research institutions.

FACILITATING FACTORS

In the framework of its university programs, Synopsys supports education and research all over the world to advance the future of the semiconductor and EDA industries. However, during the investment of that program in Armenia, the unique aspects of the country concerning its research traditions and professional background in microelectronics and computer science industry had to be taken into consideration. As such, a need arose to create a new model of university-industry cooperation, the goal of which was to restore the previous renowned expertise in the area and improve the technology competitiveness of the country.

On the other hand, the unique mission of SEUA became an important factor for Synopsys and contributed to the right choice of partner and successful establishment of an appropriate cooperation model. As the leading technological University of Armenia, SEUA had and has a unique role and responsibility for reproduction and development of engineering workforce and industrial leadership for Armenia. Moreover, the University is an important strategic resource for industrial progress and economic competitiveness in Armenia in this scenario. The interaction of the University with its economic environment and its broader engagement in local and regional programs always acquired a primary importance declared in its strategic plans. Among others it especially concerns the electronics/microelectronics, computer science and ICT related sectors. “Computer Systems and Informatics” and “Cybernetics” faculties, the SEUA main players in the established with Synopsys university-industry cooperation model, have the largest number of students and are being one of the most advanced departments of the University through the years. They offer advanced microelectronics, computer science, and IT programs for the region, aimed at producing graduates with a high level of academic background and professional expertise. The excellent track record and the sustained growth of the Armenian ICT and microelectronics industry in the past years have resulted in the growing number of enrolled local and international students - more than 2500 for now in all degree levels.

Concerning the facilitating factors that contributed to the successful implementation of the second good practice case with ANEL project, it should first be mentioned the preceding successful cooperation, which has been started in 2005, when SEUA and NI Armenian branch established a LabView training laboratory at the SEUA. As it was mentioned earlier this cooperation has been broadened by other joint initiatives and programmes, and is successfully functioning up to date. All it meets well with the following strategic objectives declared in the SEUA Strategic Plan (2011 – 2015):

- broaden the cooperation with industrial partner organizations to create joint laboratories for training and research needs;
- establish long-term partnerships with the leading employers of the University and its Faculties for collaborative training of future engineers and preparing graduates to engineering careers;
- develop and expand the previous effective experience of establishing joint study centers with partner companies (“Synopsys”, “SunSystems”, “Microsoft”).

Based on such contributory background, SEUA and NI have come together to a decision to develop further the collaboration base and progress to full strategic partnership. Since SEUA is a multi-discipline and multi-profile massive engineering educational institution with rich

traditions dating back to several decades in the twentieth century, it has been understood that the proposed ANEL will arguably be unable to cover virtually every research area or every educational discipline currently available at the SEUA. Thus, the disciplines of the ANEL were attentively devised to best fit 6 of the main engineering educational directions of the SEUA.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

The SEUA "Microelectronic Circuits and Systems" Chair not only oversees the creation of new curriculum but also supervises Student Work Groups (SWG). Each SWG consists of 8 elected students who, along with their studies, are also part-time interns at Synopsys. During their internship students are tasked with educational and industrial projects. The students participating in SWG get hands on experience designing integrated circuits and teamwork experience. It is a noteworthy fact that 80.5% of SWG interns have been hired by Synopsys. The Groups have developed the most contemporary 90nm and 32/28nm Educational Design Kits and Interoperable Process Design Kits that enable teaching of a complete and modern IC design flow. The Kits contain technology-generic information, and therefore can be used in universities to create results very close to those produced by industry. The Kits are currently being used in more than 250 universities and company training centres in 45 countries.

The SEUA "Microelectronic Circuits and Systems" Chair actively participates in a number of events aimed at raising both the overall awareness and individual knowledge of microelectronics in Armenia. Two of the most noteworthy events are the Educational Award of RA President and the Annual International Microelectronics Olympiad of Armenia. Since 2005, 59% of the Educational Award winners have been from SEUA. 90% of the Annual International Microelectronics Olympiad of Armenia winners since 2006 have been from the "Microelectronic Circuits and Systems" Chair and 39% of members of the Olympiads program committee are professors of the Chair.

Among the expected innovative aspects of ANEL, the second cooperation model, it is necessary to mention that research grants and other research funding channels in terms of scientific research at SEUA have been a vital issue under the establishment of the ANEL. It is an undisputable fact that research and innovative activities are among the pre-requisites for the standards growth and sustained quality enhancement for any University. The emergence of modern innovative engineering laboratories at the SEUA that will be in a position to serve the scientific research needs of a number of science disciplines is expected to upgrade the research and innovative capabilities of the SEUA.

SUSTAINABILITY OF THE GOOD PRACTICE

To focus on the sustainability of the first considered university-industry cooperation model established between SEUA and Synopsys seems to be unnecessary. During the past 12 years of its existence, it has demonstrated obvious advantages and well-motivated continuity. It is worth mentioning that as a result of the Synopsys and SEUA cooperation many graduates have become employees of Synopsys by meeting the necessary requirements put forth during implementation of the model. They are filling the positions of leading specialists of the Company and even Technical Managers. The rest of the students continue their education in other programs – Master and PhD or are employed in other companies of the area.

The SEUA - Synopsys cooperation model has been an effective and successful program in educating and graduating qualified microelectronic engineers for the past years. The acknowledgement of the program through the Presidential award and global exposure through the Olympiad is evidence of the program's success and the impact it has on the reputation of Armenia as a place for high tech companies to operate. It continues to serve as an ideal model of cooperation that both Synopsys and SEUA are very proud.

Concerning the second case, it was already mentioned that it is expected to achieve certain level of self-sustainability of the project ANEL after 3 years. Particularly, in a possible scenario the ANEL/SEUA can emerge as a certification centre of excellence for various disciplines in engineering (for instance, testing and certification of engineering equipment produced locally or imported into Armenia). This can be resulted by the emergence of the SEUA as a major local/regional engineering hub. It is predicted that through the learning curve and created synergies, the research opportunities of ANEL will grow over time. Thus, a larger volume of research grants may be acquired from the wide range of sources and financing channels. Preliminary analysis and consultations with industry representatives from different sectors have revealed the significant gap in the engineering services provision in Armenia. Nearly all industry players have stated their past, present and sustained future needs for enhanced engineering solutions that are currently unavailable in Armenia. According to the industry views, in case such services are provided in Armenia in relevant discipline they will be demanded by the industry and will be purchased.

In the long-term, it is projected that the ANEL will launch own product development activities in a number of areas. This can be facilitated by the increased human capital of the ANEL's staff, its technical arsenal and enhanced domain knowledge. In particular, ANEL can be involved in development of innovative educational textbooks. Furthermore, ANEL can collaborate with third parties in development of educational programs for other universities and laboratories. This will consume the then-massive laboratory expertise of the ANEL. In addition the ANEL can proceed to the introduction of the Distance Learning Lab concept and its gradual implementation. During the course of its operation ANEL will become an integral part of the University which will cover major costs related to operation, staff and maintenance.

TRANSFERABILITY OF THE GOOD PRACTICE

To show the transferability of SEUA-Synopsys educational cooperation model, it will be enough to present just a few valuable examples. The success of SEUA-Synopsys educational cooperation model has gained popularity in that the leading universities of Armenia such as Yerevan State University, Russian-Armenian (Slavonic) State University, and European Regional Educational Academy have expressed interest in implementing a similar educational model.

Universities in a number of other countries (Jordan, the United Arab Emirates, Saudi Arabia, etc.) have also expressed wish to adopt courses taught at SEUA "Microelectronic Circuits and Systems" Chair in their universities, due to which necessity rose to train first lecturers who will be able to teach courses in these countries at SAE, then students. That is why by joint agreement of Synopsys and SEUA management and SEUA Scientific Council, in 2011 SEUA "Microelectronic Circuits and Systems" Chair, in addition to 2 existing specializations (IC

Design and EDA), began to implement a new "IC Design Training" specialization in Master's program. Master students, involved in that program, in parallel to their primary specialization, specialize in teaching in the field of microelectronics in Armenian and English languages, taking a number of additional courses ("Pedagogy and Psychology", "Technology to Develop Educational Materials", "University Educational Process Organization", "Specifics Of English Language Teaching", etc.).

Students from Princess Sumaya University of Technology in Jordan participated in a two-month summer internship in 2011 and 2012 at SEUA in Armenia. The interns were trained by SEUA faculty and students. Occasionally SEUA is asked to train staff at foreign universities. For example, every semester the Moscow Institute of Electronic Technology holds a lecturers' training program run by the faculty and students of SEUA. A similar training program was also conducted at King Abdulaziz City for Science and Technology in Saudi Arabia. And finally, as mentioned earlier, curricula developed by the SEUA "Microelectronic Circuits and Systems" Chair is used by the world's many leading universities in over 45 countries. These educational materials are available in 4 languages (Armenian, Russian, English, and Chinese) and are posted on the Synopsys University Program web page.

Concerning the transferability aspects of the second project it is worth mentioning that international practice reveals that the certification courses are an important base for engineering education and more importantly, for private sector clients. It is expected ANEL will deliver vocational training for the students of other universities and workforce of industrial companies as an additional revenue generation source. The certification courses will also potentially appeal to Southern Russia (e.g. Krasnodar 11 region), Caucasus (e.g. Georgia), Central Asia, Middle East, etc. due to absence of such certification centres of excellence in the aforementioned regions.

LESSONS LEARNT AND RECOMMENDATIONS

As the educational model realized by Synopsys and SEUA has brought enormous success, it has been highly appreciated by the Armenian community as well as by the other above mentioned Universities involved in the consortium later. Going forward, the presented university-industry educational model will be further developed. Constant modernisation of the curricula, its standardization, and involvement of the needs of other Companies in the microelectronics industry located in Armenia are among the opportunities for enhancing this valuable and effective model. Besides, a decision has been made to try applying that model not only during the last 2 years of Bachelor Program but also from the very beginning. In particular, started from 2010/2011 academic year a new "Semiconductor Physics and Microelectronics" specialty has been opened in SEUA. Here the described model was applied from the first year as a pilot. But in two years the University and Company have decided to come back to the previous model assuming the basic 2-year education at the University, and giving a wider possibilities for the selection of advanced students to be involved in the program continued at the Company.

As it was mentioned, universities of a number of countries (Jordan, the United Arab Emirates, Saudi Arabia, etc.) have expressed a wish to adopt courses taught at SEUA "Microelectronic Circuits and Systems" Chair in their universities, due to which necessity

rose to train first lecturers who will be able to teach courses in these countries, then students. That is why by joint agreement of Synopsys and SEUA management and SEUA Scientific Council, in 2011 SEUA "Microelectronic Circuits and Systems" Chair, in addition to two existing specializations, began to implement a new "IC Design Training" specialization in Master's program. Master students, involved in that program, in parallel to their primary specialization, specialize in teaching in the field of microelectronics in Armenian and English languages, taking a number of additional courses ("Pedagogy and Psychology", "Technology to Develop Educational Materials", "University Educational Process Organization", "Specifics of English Language Teaching", etc.).

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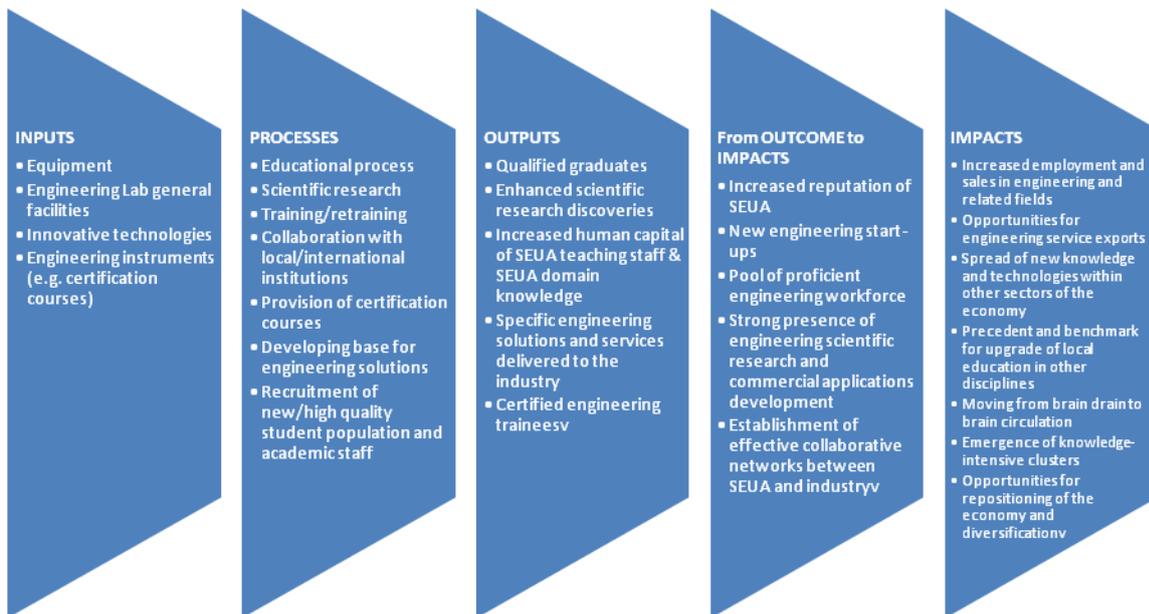
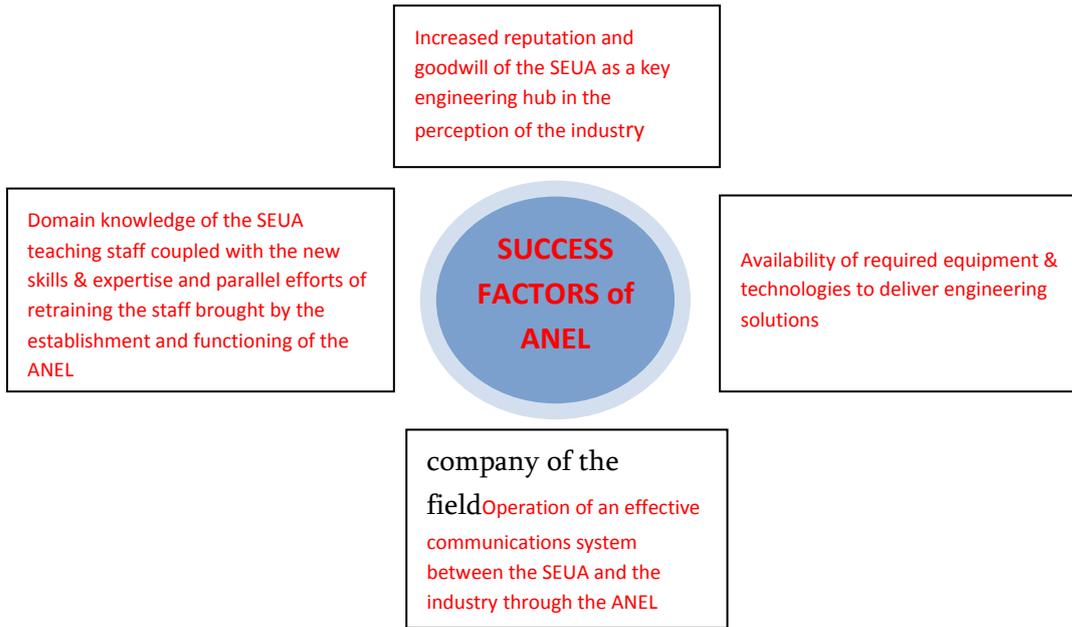
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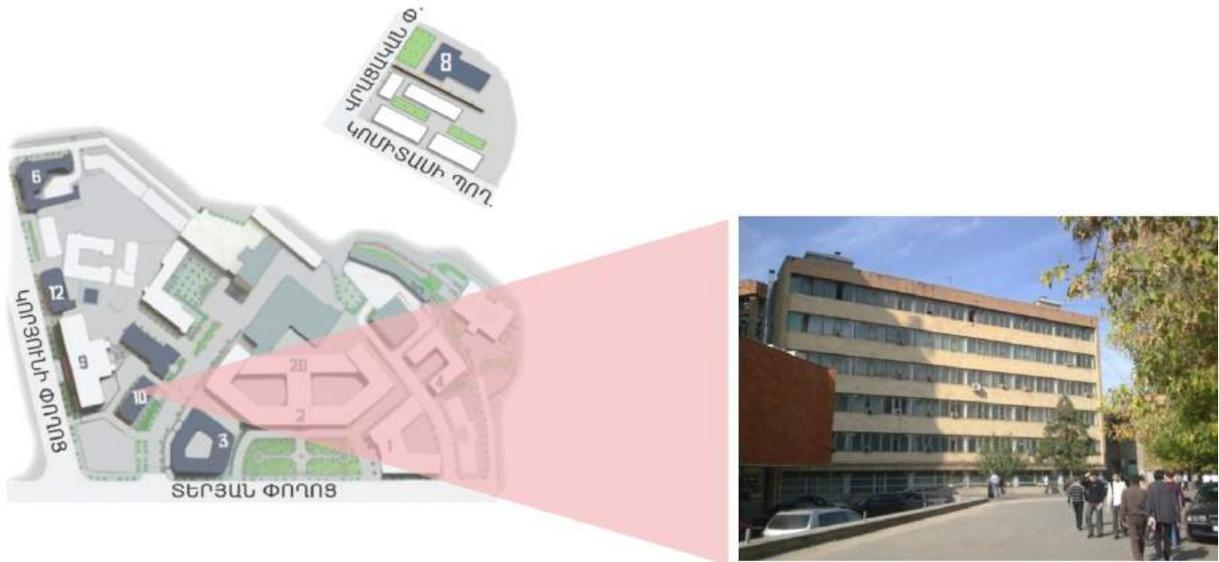
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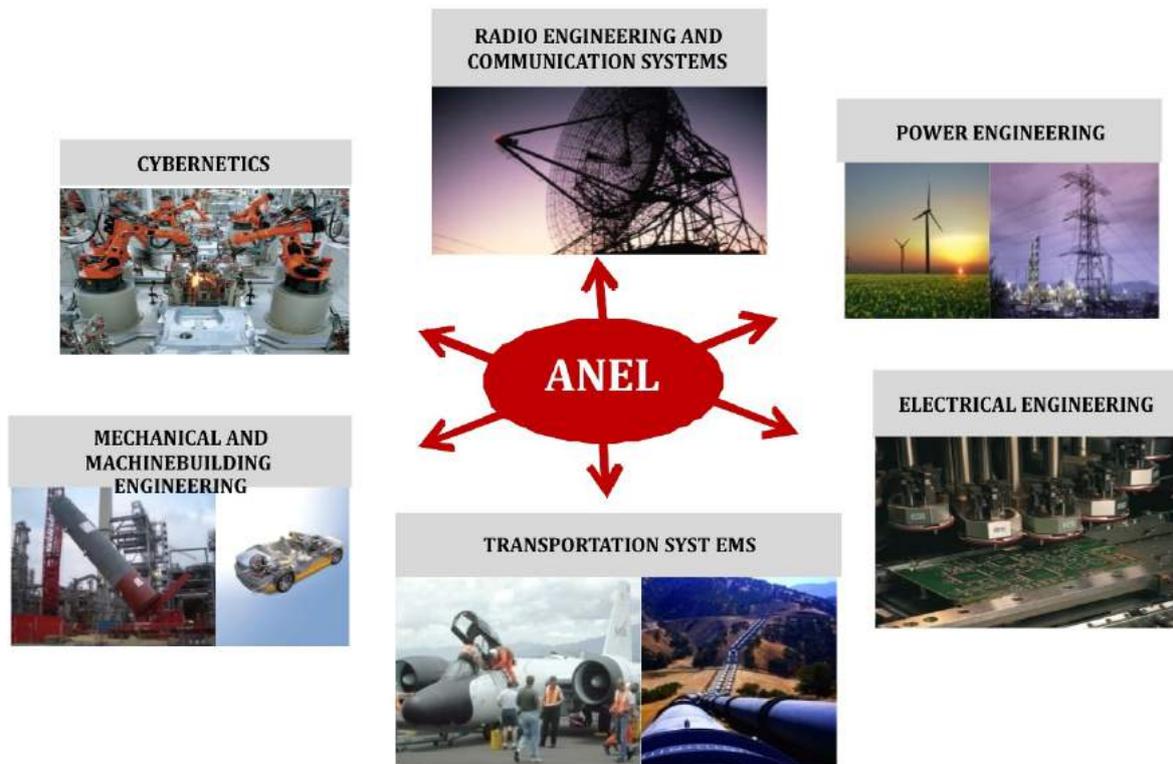
APPENDICES

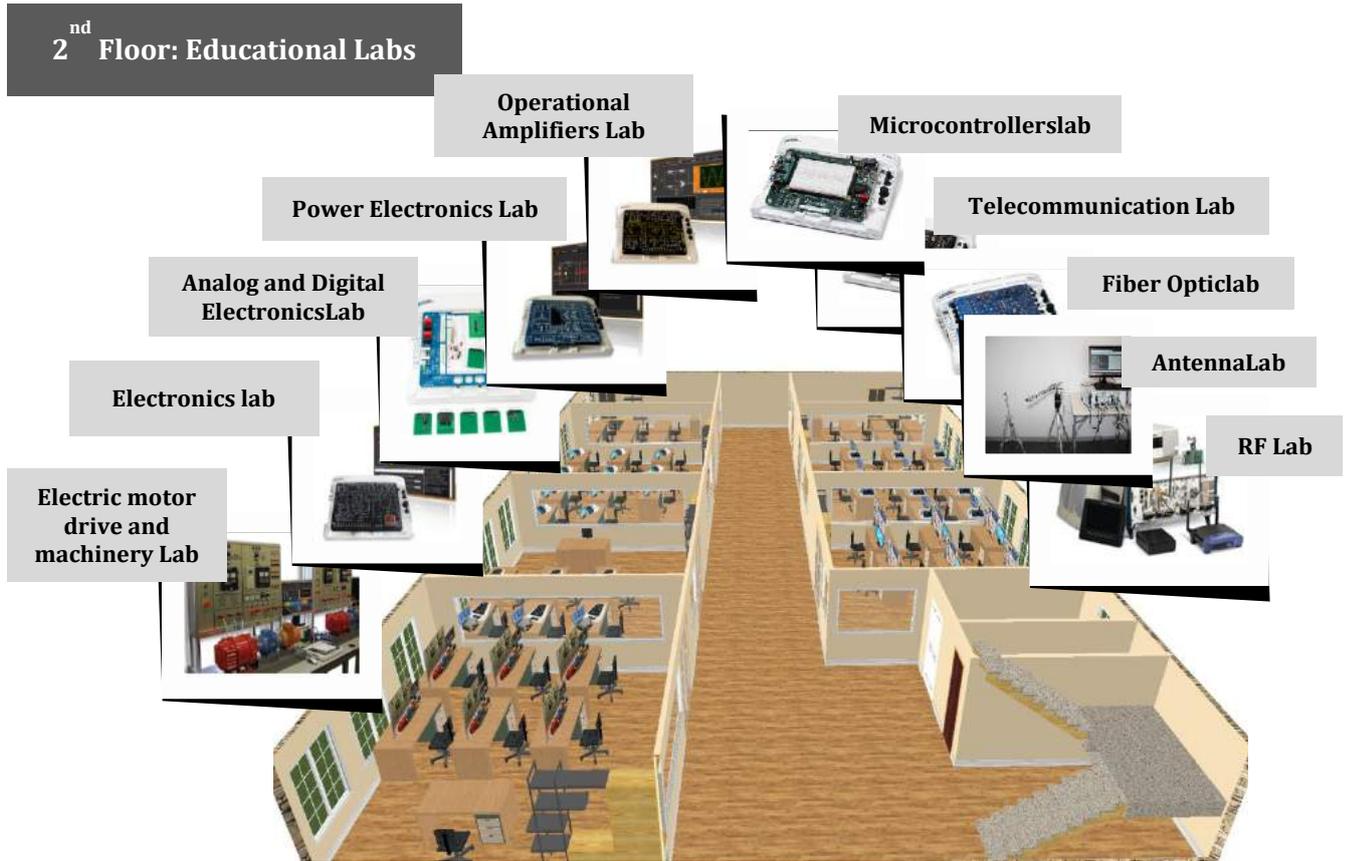


From Inputs to Impacts: components string expected from the ANEL project



The map-plan of the SEUA Central campus in Yerevan and the building #10 (ANEL)





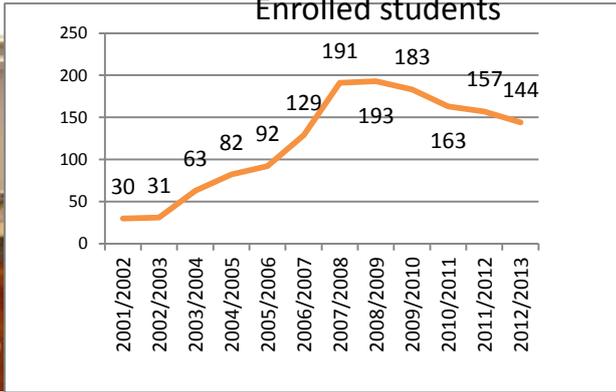
The plan of a standard “Lab floor” to be established at SEUA within ANEL project



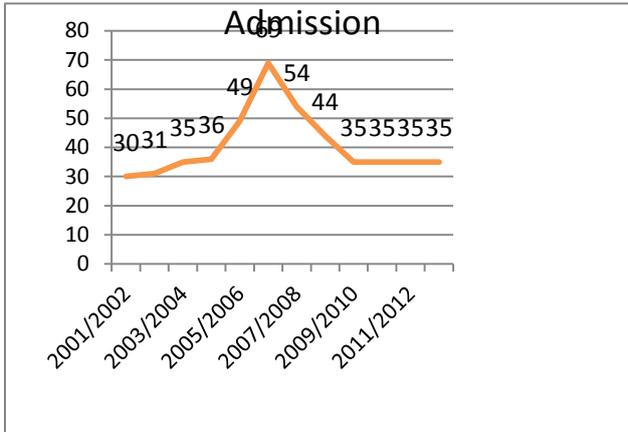
A standard classroom at Synopsys



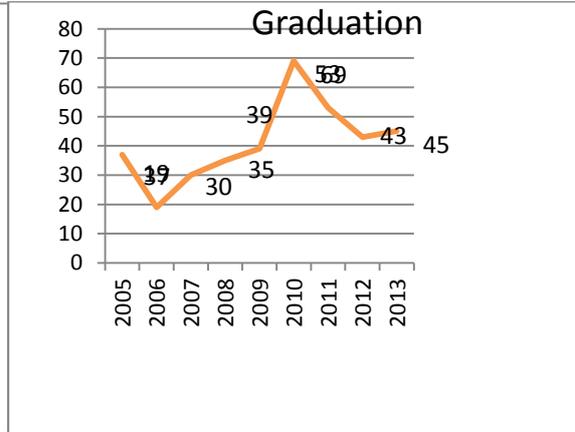
Enrolled students



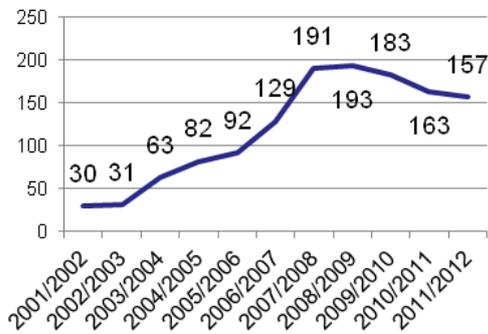
Admission

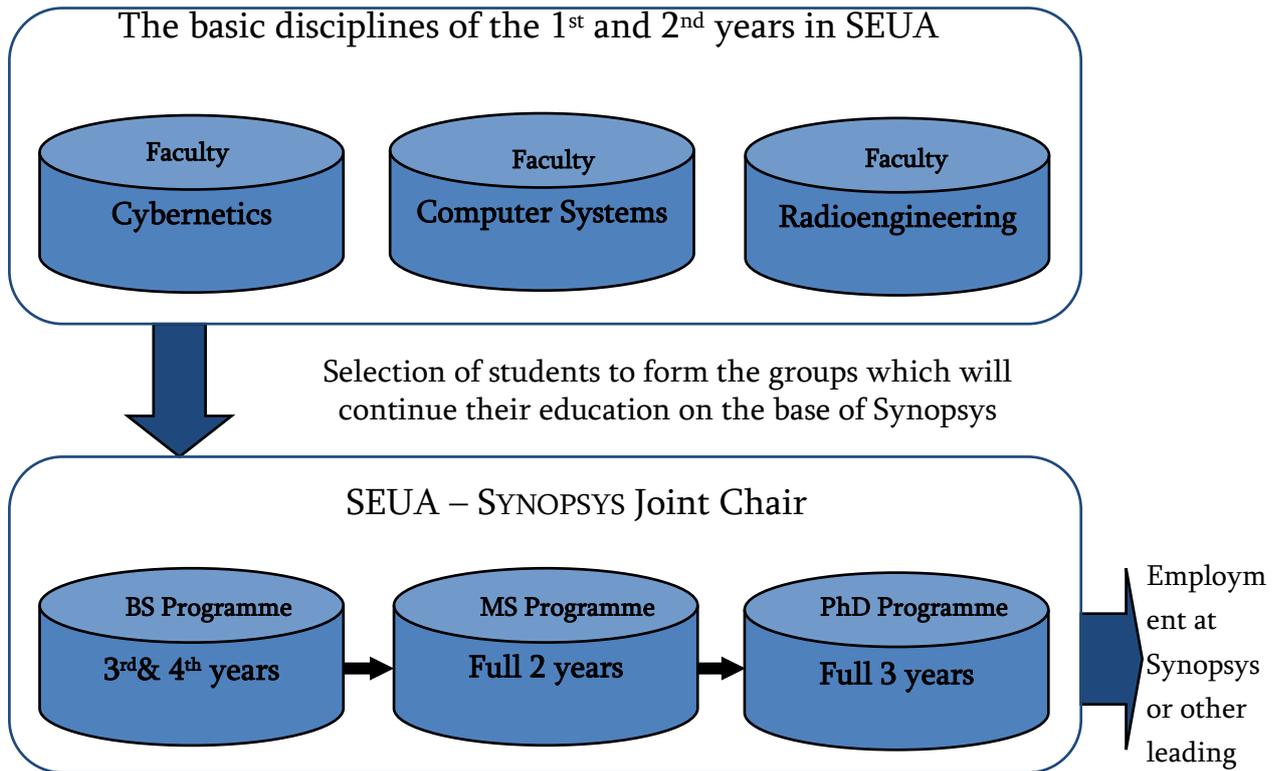


Graduation



Employment





The organizational chart of the SEUA – SYNOPSIS joint educational model



14. Development of Partnership between University and Enterprises

Volodymyr Dahl East Ukrainian National University, Ukraine

EXECUTIVE SUMMARY

Today many researchers consider that the principle source of effective competitiveness of enterprises is the potential and qualification of their staff. In order to train and to educate highly professional employees the modern education system needs to develop a special strategy of cooperation with industrial and business sectors, as they are the main stakeholders of the educational service through hiring graduates and investing in the researches carried out by the university students and staff. The interaction between university and commercial organizations allows to solve a huge range of challenges that face the modern higher education system, namely the irrelevance of the training content and the requirement of the labour market, insufficient financing of the education and researches, updating the equipment used in the educational process, reduction of student and staff mobility, decrease of graduates' employability.

Examples of cooperation between education and business have a place in every country. This partnership has diverse forms and is at different stages of evolution. Volodymyr Dahl East Ukrainian National University (EUNU) has taken constructive steps in order to build powerful strategy of involving business and industrial organizations as partners into educational process. The key point of this strategy is the strengthening capacities of all parties engaged into cooperation.

BACKGROUND INFORMATION

EUNU was established in 1920 as the first higher educational institution founded on the basis of locomotive-building plant in Lugansk city. In 1996 EUNU received the fourth level of accreditation and in 2011 it was given the status of a national university.

EUNU is a powerful educational, scientific and production complex which consists of the main university in Lugansk city and diverse branch departments throughout Ukraine. The basic educational structures of the EUNU are represented by 14 faculties and the following 8 institutes: Institute of Economics and Finance, Institute of Applied Mechanics and Material Sciences, Institute of Philosophy and Psychology, Institute of Jurisprudence and International Law, Educational and Scientific Institute of Labour and Social Technologies, Institute of Postgraduate Education and Distance Learning, Technological Institute in Severodonetsk and Institute of Chemical Technologies in Rubizhnoe. These units train more than 35 students and provide educational services in 130 specialists. Highly skilled staff, represented by 450 teachers, including 1286 professors with PhD title, enriches the life of the EUNU by their researches.

There are 58 educational buildings and laboratories the total territory of which is above 160,000 km². EUNU has sanatorium for one hundred places, recreation centres in the Crimea, sports camps, 8 hostels and canteens. The University has its own publishing centres where institutional journal "Visnyk", monographs, scientific and student books are

published. The university TV studio was made under the auspices of the Mass Media Development Fund of the USA Embassy in Ukraine. Thus, students majoring in journalism gain an invaluable professional experience through organizing TV interviews with the guests who visit EUNU. The university is very active in the sphere of scientific and research work. Annually EUNU organizes more than 30 International and Ukrainian scientific conferences and workshops. The Library Fund of EUNU comprises 800,000 copies of educational, scientific, reference, normative, literary and art editions in different realms of knowledge.

EUNU is a member of numerous international organizations as follows: Magna Charta, Eurasian University Association, International Association of Universities, European University Association and others. Around 123 agreements on cooperation were signed with foreign universities, institutions and companies from 24 countries. Thus, EUNU approaches to the standards of studies of European educational space, operates on principles of strengthening of role of independent student work and promotes student and staff mobility.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Internationalization

Irrelevance of graduates' skills to labour market needs

Weak links between education, research and innovation

Weak knowledge-transfer infrastructure at the higher education institutions and lack of

THE WIDER CONTEXT

The educational policy of the Ukrainian Government is based on the National Strategy of Educational Development in Ukraine for 2012-2021. According to this document, the national strategy has to be formed adequately to the modern integration and globalization processes, requirements to the transition to the post-industrial civilization, to the demands of creating and maintaining a sustainable development of Ukraine, integration of the national educational system into European and world educational environment. Modernisation of the higher education institutions, their reorganization and improvement are carried out in the context of complicated demographic, social and economical conditions. But at the same time the effectiveness of educational reforms and their quality cannot correspond to the full extent to the modern demands of the person and society. The actual level of education in Ukraine cannot fulfil the function of the key resource of economical and social development of Ukraine and increasing of citizens' prosperity. The national strategy acknowledges that integration of Ukraine into world educational environment requires the constant improvement of the national educational system, search for the effective ways of educational quality assurance, correspondence to the world standards in education. The modern labour market requires from the graduates not only the deep theoretical knowledge but a capability to use this knowledge independently in specific and variable life situations.

Among the principle tasks for the higher education realm that are set in the national educational strategy it is also mentioned about need to elaborate legislative and regulatory framework regarding the motivation of employers to cooperate with higher education institutions, to participate in elaboration of standards for higher education, providing bases for the traineeship for students and the first work place for graduates. The expected results

of realization of National strategy of the education development are the following: increasing the quality of education of graduates, improvement of competitiveness of Ukrainian education due to installation of fundamental and practical targets for educational programs.

Today numerous Ukrainian economists are confident that neither capital nor technologies could be considered as the key sources of competitive advantages of the enterprises in the country and at the world labour market. The path to success lies in the qualitative human resources. A developed system of professional education is required to be realized in order to achieve good results in preparing and training of skilled staff. The improvement of the educational system presents a considerable interest not only to potential students and government but also to the business enterprises and companies that are geared to hire well-trained employees who are able to think and to work in innovative way.

The interaction between higher education institutions and business enterprises allows solving at least three issues that currently exist in Ukrainian higher education system: mismatch between professional training and graduates' employment, insufficient funding for the higher education, reduction of scientific activity of universities. But it should be worth mentioning that economical motivation for education development is absent in Ukraine. Therefore the higher education system has become loss making, provides unskilled graduates and the quantity of graduates doesn't correspond with the demands of the labour market and society.

According to Rodion Kolyshko, representative of the Employers' Federation, the fact that educational system in Ukraine remains backwards in comparison with other countries, is related to the lack of motivation among students to receive a quality higher education. To his mind, the reason of this problem is the absence of demand of higher education in society.

In modern terms the labour market is determinative in setting the tasks of development to the society and also to the higher education. Employability, innovations, ability to apply received knowledge and skills are now the priorities in the paradigm of values of the modern social relations.

According to the forecast made by UNESCO, in XXI century the prosperity will be reached only in those countries where 40-50 % of population able to work will have quality education. Today in Ukraine 13 % of population has complete higher education and 16-18 % of those who has only undergraduate education. It should be noted that the low level of professional and common cultural bases of the considerable part of the population, particularly of young people, makes a threat not only for the perspectives of economical growth but also for social stability.

World practice shows that more than 50 % of the GDP growth per person is provided by the increase of the work productivity, qualification and professional skills of citizens. The assurance of effective economic development much depends on the higher education that can give to the national economy greater potential regarding correspondence of scientific researches and innovation to the various demands of the country. The demands for highly qualified professionals are increasing due to the following factors:

- gradual augmentation of the production level that requires highly professional workers in different realms;
- endeavour to receive deep professional knowledge; comprehension of the high role of education in the achievement of prosperity and relevant social status.

It should be noted that research activities should be combined with an innovative activity, which is a process associated with the creation of new products in engineering, technology, labor organization or management, based on the use of science and best practices and which provides a qualitatively new efficiency of the production system or product quality.

As the World Economic Forum in 2009-2010 indicated, Ukraine received one of the highest position – 32 in the forum rating for the factor "ability to innovate". This position in the ranking indicates the potential of the country's capacity to carry out the development and implementation of innovations, i.e. availability of national innovative capacity, which is an important factor for successful adaptation of Ukraine to the global economic space.

Unfortunately, the educational reforming in Ukraine is much slower than market reforms in the economic sphere. The competition mechanisms are gradually developing in the economy, the role of government is changing into the domain of the regulatory framework. The processes of adaptation to new conditions and gaining controller functions for the government are not so obvious in education. Consequently, the following issues can be emphasized:

- Inconsistency of the education quality to the economic needs: according to the TIMMS ranking, Ukraine occupies the 26th place for mathematics and natural science. Every fifth Ukrainian employer indicates problems in his production activities related to the irrelevant training level of graduates both of vocational and higher education systems does not correspond to the working jobs.;
- Deepening of structural imbalances in the training of specialists and demand them at the labor market. Training due to public funds does not solve problems of the labor market. In 2011, 975.5 million people aged under 35 were registered in the civil service employment, including 74.1 million people - graduates of higher and vocational education. The main causes of youth unemployment is the mismatch volume and areas of training needs of the economy and labor market, lack of quality training, poor working conditions offered by employers for young people in specific jobs.

This situation has arisen, particularly due to the imperfect functioning system of professional training of employees caused by lack of proper mechanism of financing and state order for staff training, independent attestation of graduates, effective relationships between schools, employers and local authorities, lack of motivation of young people to mastering professional occupation, low occupational adaptation of young employees in the workplace. There are diverse reasons of such situation, among them the key reasons may be the following:

- Ineffective monitoring of labor market needs, neglect of vocational technical and higher education needs of today's employers. Non-compliance of activities between relevant central and local governments that are authorized for the formation of state order for training and retraining of specialists during the planning of needs.
- Lack of continuous quality management system and its monitoring. Education quality

is a multidimensional concept that encompasses all aspects of higher institution and that must meet international requirements and be provided by the universities, be guaranteed by the state.

- Ineffective procurement mechanism. Poor funding of the higher education (different prices of training within a specialty that indicates a different quality of graduates).
- Duplication of trainings for preparation of professionals and saturation of the labor market by experts from humanitarian professions.
- Structural imbalance of higher and vocational education. High hype about higher education, the prestige of the Master's degree lack of jobs for the Bachelor's degree, uncertainty of study load and application of the degree "Specialist".

To remedy the situation, a number of problems has to be solved, most important of which are the following:

- improvement of the education system management;
- optimization of the structure for educational institutions;
- creating mechanisms for motivating employer participation in training including their involvement in the educational process, teaching and practical training, etc.;
- review of approaches to the procurement as an institution state funding for its own needs for specialists and professionals, but not a support of the existing network of educational institutions.

According to the above-mentioned, is it necessary to concentrate efforts on implementing a number of measures, including:

1) Development of a comprehensive system of integrated management system of education, which includes:

- development of the National system of education quality assessment, assessment criteria (establishment of independent centers of qualification), creating the unique independent national university ranking;
- institutionalization of an independent evaluation at all levels of education system;
- division of powers between the central, regional authorities and education (in relation to the functions of autonomy through delegation of authority to educational institutions);
- expansion of university autonomy through transferring the real authority in the management and financing to HEIs;
- consolidation of regional universities.

2) Transition to the budgetary funding for education, to the standards of prices, differentiated only by the level of training. Funding must be related to the quality of a student training.

3) Reforming the system of retraining of staff and teachers (practical professional component).

4) Implementation of the National qualifications framework, initiating the development of professional standards-based competency approach to educational preparation at HEIs.

5) Increased motivation of employers to participate in the development of educational programs, coordination of educational and professional standards. Interaction between professional and technical educational institutions and higher education institutions with employers during creation and updating the content of educational programs; reorientation of curricula to the increase of practical component, effective implementation of training

programs (training practice). Creation of a National Fund for the training and retraining that accumulates tax revenues of employers

6) Elimination of gap between labor market and education. Establishment of the legal framework for the implementation of public-private partnership in education; introduction of incentives (in the form of tax breaks) to increase business investment in the development of higher education and research. Improvement of mechanism for employment of young specialists on their first jobs.

7) Optimization of state order for training, retraining and of professional development. A new model of higher education must be created. In this model the state order should exactly correspond to the volume and specialties in demand at the current stage of society and meet the perspectives of its development over the next 10 years.

8) Equal educational opportunities for individuals with special needs.

9) Diversification and development of "lifelong learning". Introduction innovative forms of learning process (legalization of the distance learning form of education). Empowering the organization and implementation of education for adults (including for reintegration into the labor market).

RATIONALE AND INTENDED RESULTS

Engaging employers to participate in the educational process and in the evaluation of its quality is one of the key elements in enhancing the competitiveness of graduates of the University, as well as an important tool to enable improvement of the quality of training.

The overall objectives of the cooperation between our University and employers are the following:

- Joint development of quality assessment provided by the University and the quality of graduates;
- Ensuring the implementation of competence-based approach in preparing for professions, specialties and areas of vocational education;
- Joint development of requirements for professional competence of graduates;
- The overall tasks of the cooperation between University and employers:
- Attracting graduates of secondary education establishments to pursue studies at higher educational institution at the specialties and areas of training that are significant employer;
- Orientation of students to pursue academic and (or) production practices, training and subsequent employment in the organization;
- Ensuring creation of material and technical, educational and human conditions to improve the quality of students' training according to their specialties and areas of training that correspond to the profile of the organization (business) of the employer;
- Conducting joint research on issues that present interest to both partners.

The cooperation of employers and the University in the development and implementation of educational programs and projects is carried out in the following areas:

- participation of employers in the evaluation of content, organization and quality of the educational process;
- development and review of educational and training material;
- involvement into development of strategies to ensure the graduates' preparation quality;
- assessment of basic education programs
- inclusion additional competencies for the requirement of the educational

- programme and training outcomes;
- practical training of students on real jobs during the period of internship;
 - carrying out training sessions for students, including lectures, seminars, workshops, etc. by the representatives of employers;
 - preparation of coursework and research projects upon the request of employers;
 - involvement of companies' representatives as external experts during the student certification in order to realize control of the students' competences;
 - involvement and participation of companies' representatives in the special university trainings;
 - participation of employers in the student scientific and practical conferences, scientific workshops, etc.;
 - employment of graduates;
 - receipt of feedback to the University from employers (through the procedure of questionnaires) about the level of students' professional competences for the purpose of adjusting and improving educational programs.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

Industry and enterprises are the main resources of national productivity and prosperity building and also they state to be the key stakeholders of the education services because companies are directly related to the graduates' employability and the enhancing of research level. In the context of economical crises and difficult situation in the field of the labour shedding, the task to find reliable partners from the industrial and business sector for establishing long-term cooperation is rather complicated. Nevertheless, our university elaborated a strategy of companies' involvement into educational process and it has been working effectively for a long period of time.

One of the most important forms of interaction between EUNU and partner enterprises is conducting questionnaires for employers who are looking for staff among the graduates of the university. EUNU sends out mailings with the questionnaire to managers of the partner organizations and a letter of appeal which states that by joint efforts of the university and business companies we can bridge the gap between university preparation and the requirements of modern production process. Thus, we can achieve coordination of interests between university and employers. The answers tend to come immediately, and hence we can state that the interest of employers in partnership with the university is very high. In the questionnaire, business leaders and organizations express their demands on the candidates, intent to hire a definitive number of university graduates if they will meet their requirements.

Also companies offer their own preferred forms of cooperation such as: individual training on request of the company, hiring students for part-time working day during the period of practice with the prospect of future employment, attracting leading specialists of the enterprises to guide the students' researches they make while studying at the university. There have been specific requests for graduates' of the determined speciality, and our department of employment together with the deans and head of chairs has been working on the selection of the required specialists. Respondents also answer for such important questions as the quality of the training of young professionals, the problems of adapting at the workplace.

Also representatives from EUNU are very active in participating in diverse conferences, workshops and scientific fairs where they can communicate with various managers of the industrial and business organizations and to discuss with them the possible ways of cooperation. After negotiating, we try to keep in contact with the potential partners and to continue dealing with them through different forms of cooperation. We work out projects with feasible goals and describe in detail the way of achieving these aims. When we have the first steps done in negotiating, we accord to sign an agreement to strengthen our joint work and to develop our future cooperation. Thus, our Department of Industrial and Artistic Casting has signed 12 agreements with Ukrainian companies and 6 agreements with German leading companies: ArcelorMittal, BMW, Berger Consult and others.

The targets of the agreements are the exchange of information about the researches and investigations in engineering realm; joint training of students; arrange of introduction practical and language internship for the students of EUNU at the companies' premises; exchange of researchers, teachers and staff. Due to the support of the ArcelorMittal company the Ukrainian and German Scientific and Research Laboratory of Foundry Processes was opened at the premises of EUNU and became a unique for our region. The ArcelorMittal company presented to the university laboratory the modern high-tech foundry equipment for grinding and polishing material, for examining structural modifications within casing production, as well as special software – image processing system and a tremendous number of books related to the casting field for the laboratory library.

The head of the Department of Industrial and Artistic Casting was appointed to organize the work of this laboratory. Students of the engineering specialities and university staff got opportunity to learn practically how the modern casting equipment works and the principles of the modern moulding process are realized at the leading foundry companies. Other industrial organizations also pay great attention to the created scientific and research laboratories and they enriched the material and technical basis of the laboratories by providing rare equipment and software for exploring casting technologies.

Afterwards, EUNU came to terms with partner companies to launch a programme of mobility development and every year the company provides up to 10 internship places for the students of EUNU. According to the signed agreement, EUNU has to send to undertake the internship only those students who are outstanding in their studies and are prepared to fulfil the internship owing to their high level of language proficiency, competencies and good professional background. The criteria of eligibility are, at least, the basic knowledge of German language and additionally the command of English language, especially of the technical vocabulary.

In order to prepare students to meet the requirements of the set rules by the partner company, EUNU reviewed the curricula of several engineering specialties and amended them by supplementing learning hours for language preparation and for new topics that were recommended by the partner companies' representatives. The included topics comprise the theoretical material that is needed for the work at the partner organizations and that can help students to familiarize quickly at their work places during their internship period.

The selection of the students for the internship at the partner companies is carried out at EUNU according to the established procedure. Once a year no later than 9 months before the start of internship, the university is holding a contest for those who desire to take part in the internship programme. Reviewed documents of the candidates should be directed to the partner companies no later than 8 months prior to the internship. Not later than 7 months before internship two representatives of the partner company will conduct interviews with candidates at EUNU. After mutual agreement of the results of the competition and interviews with students, a list of their names should be directed to the partner company not later than 6 months before the start of internship. As an alternative to a trip to EUNU partner organizations use the internet communication (online test, video conferencing, Skype) in order to decrease expenses of travelling.

According to our university statistics, all students who have been selected and undertook the internship at the leading national or foreign companies could be hired just after graduation at the work and on the positions with which they are satisfied. Most of them (70 per cent) were hired at the partner enterprises where they had passed their internship. This proves that the elaboration of such internship programs with the partner organizations helps students to gain first working experience and to become more competitive at the global labour market.

As one of the cooperation strategy, representatives of partner organization who involved directly into engineering or management work conduct regularly lectures for students of EUNU. This helps us to identify the aspects according to which the partners want to develop their future employees, to analysis in which way we should educate our students in order to train them as specialists who are ready to work on the best foreign companies. Hence, students are obliged not only to know foreign languages and to have deep knowledge in the relevant specialty, but also to possess communicational and intercultural skills, to present expertly their projects and their abilities to perform the work. EUNU decided to arrange special workshops and trainings for the students who are willing to participate in different grant programmes, including internships at the partner organizations.

The above-mentioned workshops and trainings comprise the methods of writing successful motivation letters, essays on the relevant topics, CVs, the recommendations how to pass the interview, how to present professional background. Such trainings are very popular among students and every year the number of selected students is increasing. During the trainings that are prepared and carried out by the representatives of the International Cooperation Department, students are also learn more about different ways of cooperation between university and enterprises, about various scholarships and possibilities of employment.

EUNU regularly addresses to the leading specialists of the companies to conduct lectures, workshops for students and staff, also companies' representatives are appointed to guide the students' internship work, they control student activity during the internship period and evaluate their research papers. For every scientific conference that is organized at our University we attract employers and companies' representatives to participate in the conference presenting articles that could give a general presentation of their companies. Such events are the most effective to connect students with their potential employers as it happens very often that employers invite the most active students of the conferences to

work at their organizations.

Also we negotiate with our partner organizations about arranging of study tours for our students and university staff in order to visit our partner enterprises. The general objectives of the study tours are the following:

- to learn the organizational structure of the partner companies and to comprehend the management strategy and the specific of services realized by the enterprises;
- to familiarize with the modern technological systems and procedures that are applied at the manufacturing sectors of the organizations;
- to learn the history and development path of the enterprises through participating in the excursions to the museums and factory units of the companies;
- to gain practical experience through working with the high tech equipment at the laboratories and factory units under the control of the company representatives;
- to become aware about the requirements of the specific manufactory unit to the professional competencies of the potential employees.

EUNU has also participated in another Tempus project 159338-2009-TEMPUS-LV-SMHES "Higher Education System Development for Social Partnership Improvement and Humanity Sciences Competitiveness" (HESDeSPI) the principle goal of which was the development of joint, accessible and successful system of methodological recommendations that will increase the competitiveness of humanity sciences and involve the social partners into it. Within this project numerous meetings were held at EUNU with the participation of the Lugansk Regional Union of Employers' Organizations and the university chair "Philosophy of culture and culture studies" that was the main participating unit of the. The aim of the meetings was to realize the depth, scope and all spectrum of the problem of the interaction between higher education institutions, society and employers. The most significant result of joint social work was the creation of constant acting three-sided coordination Commission consisting of Lugansk regional state administration, university representatives of the top management level and employers.

The established "Information Labour Centre" is a working mechanism, body of this commission which allowed uniting and coordinating the efforts of all parties interested in the increasing of specialists' training quality. Employers could also meet with students and teachers in the framework of the "Fairs of vacancies" during which the particular ways of improving specialists training (in the records management field) have been discussed. New changes and relevant amendments into syllabus have been done and according the held questionnaire students evaluated all these changes as positive and very useful for their future employment.

Within the HESDeSPI project we discovered problems and ways of solution related to the core competence requested by the labour market from the graduates. According to the poll results, the employers need not only employee's diploma, but also profound knowledge and certain skills; therefore, the labour market necessity of the skilled workforce has been observed. Besides, heads of organizations make the additional demands: the knowledge of foreign languages, the office work, the administrative skills and the knowledge in the field of culture management, etc. One of the essential today's requirements to the candidates on replacement of vacancies offered on a labour market is the experience and the job tenure in

their specialization. Consequently, the high school graduates without experience and job tenure in this case appear in a less favourable situation, than their "senior" colleagues. Hence, the graduates have no either experience or even possibility to obtain such experience. Possessing high and sufficient academic background the graduates feel shortage of practical skills including in the administrative field.

The solution of this problem seems to be in expansion of the present content of the specialization. The practice of time hiring for single works (any advertising actions, marketing researches, sociological polls, work in policy, employment on public works, activity in partner organizations, etc.) can be one more possibility for the graduates to obtain the necessary experience. The introduction of the practice of the recommendation letters seems to be useful. The employment of graduates in this case will not only allow them to receive an experience, but also to establish a reputation that plays a considerable role in a modern labour market.

EUNU pays a great attention to its own marketing strategy that helps to manage University reputation and brand, and communicate its aims and achievements globally, nationally, regionally and internally. This strategy is also aiming at establishing stable partnership with enterprises and at disseminating the information towards joint activities between university and partner companies among target groups. There are different administrative departments and units at EUNU that develop and realize the marketing model. The joint collaboration of every department or unit gives excellent results and corresponds to the marketing trends of world leading Universities.

Public Affairs Office develops strategy for promoting events in order to enhance public awareness and increase event's recognition and value. The team has an efficient background in organization of communicative and advertising campaigns and arrangement of creative special events such as regional educational student fairs, workshops, scientific exhibitions, public lectures and presentations.

Media relations help the University to broadcast events through various local, regional and national TV channels and radio stations. We often invite local media groups to cover the events. However our University has its own TV studio with high tech equipment and camera crew that consists of well-trained professionals. They can make independently the news items and then to disseminate this material via different Ukrainian media stations.

International Cooperation Department carries out a wide range of activities designed to build and maintain strong interest to the academic events among internal and external audience. Collaborating with departments across the University, the team serves as a University-wide resource which provides expertise and guidance in the planning and implementation of events. Thus, every Tuesday we arrange a meeting with senior management, faculty staff, representatives from Student Council and inform them about upcoming events. Also we used to organize workshops both for staff and students to present them possibilities to develop their academic mobility and to help them to meet the requirements of the diverse fellowships, projects and programmes. We confirm that our students and staff are very enthusiastic and are willing to take an active part in any event.

Our multimedia laboratory is responsible for the University's corporate website and Facebook page and manages its output across all digital and social media. This team closely deals with the University publishing office which is in charge of issuing brochures, prospectus, scientific collections of work and journal "University Reporter". After the survey we've made among students and staff, we assured that the University journal is really useful and increases their motivation to become a significant participant of University life.

All these University units make a great contribution for coordinating strategic marketing in the field of cooperation with enterprises. This communication model effectively achieves students, staff, general public and key stakeholders and promotes consistent and persistent dissemination of positive University key messages through the media, publications, websites and special events.

RESOURCES REQUIRED AND USED

At EUNU we have special department of employment that is charged to organize an effective collaboration with industry and business companies. With the help of this department many university chairs and faculties have concluded agreements with enterprises in the field of training in order to prepare highly qualified workers. Hence, EUNU has 87 agreements with Ukrainian companies and 45 agreements with international organizations from Germany, Turkey, Romania, Finland, France, Denmark and other countries. The collaboration with international companies is under control of the International Cooperation Department that has elaborated templates of tripartite agreement for academic training of internship (university-organization-student) and guides the realization of students' practice abroad. Leading specialists from various enterprises are involved into joint activities as experts for coordinating of students' research projects or for preparing curricula for relevant specialities.

The university senior management representatives also take active part in the development of cooperation with enterprises: they supported stable connection with company authorities and helped to promote diverse educational project that required company's assistance. And the key actors of the cooperation between university and enterprises were students. They are very encouraged by different opportunities to work within leading national or international organizations and to gain first experience at these enterprises.

In order to realize diverse academic projects with companies, there was a need of financing investment. Thus, for example, our regional and German industrial companies created a unique scientific laboratory of casting processes where teachers could conduct different researches and students could learn how to work in practice with the modern professional equipment that is used at the worldwide level. Our partner companies provided advanced technology machines and software for pattern processing. Meanwhile, other organizations also supported the idea of developing research centres at university and they enriched our university laboratory with new engines. Also we are very interested in internships and we reached an accord with our partner organizations for providing annual scholarships for students and staff which cover expenses for travel costs, accommodation and subsistence costs during the scholarship eligible period.

FACILITATING FACTORS

Many enterprises showed a strong interest in cooperation with universities and this willingness to work jointly always helped us to achieve good results. The facilitating fact was that many international companies received special financing for support and development of research and internationalization and they considered this task to be one of the key activities of their organizations. Therefore, we elaborated projects in the corresponding fields in which companies are specialized and we entered into negotiations focusing on the results that could present important benefits for companies. The main idea of our projects was the creation of scientific centre at the premises of our institution, to conduct researches upon the request of the companies and to train students according to the requirements of the companies in order to prepare good specialists. The partner companies thought these deliverables to be feasible and profitable and they agreed to collaborate and to finance our projects.

Our staff and students also were prepared to start working with international enterprises. Their knowledge of foreign language was at a high level and we selected the most outstanding professors and students to be engaged in the academic projects with companies. For introducing new disciplines our teachers needed to learn new material and to acquire necessary skills to work with new advanced technology equipment which was provided by the industrial organizations. This was a rather tough task but all our staff applied efforts to fulfil the requirements of the companies.

It should be indicated that employers consider education as a service and they assess its quality in role of key customers. Employers were very active in education assessment and in providing counselling towards improvement of educational content. They participated in the preparing of curricula to ensure the correspondence of the educational programmes to the real needs of their companies.

CHALLENGES AND OBSTACLES

The economical crises influenced negatively the effectiveness of our cooperation with enterprises. It has caused the fall of number of scholarships and the reduction of amount for financing aid from the partner enterprises. During the last five years our partners with whom we have long-term cooperation shortcut student scholarships by 25 per cent. The number of students that received a permanent place of work within the leading international companies just after graduation also decreased because of the collective labour shedding by 40 per cent.

There is still a problem of language for staff and students. The employers set the knowledge of at least two foreign languages as one of the main criteria for selection of candidates for internships. And in the comparison with the general number of students, there few of them who can meet the companies' requirements.

As our partner organizations also provide us counselling towards the content of the educational programmes and participate in the curricula development, we should include new disciplines into our university studies. And it is a rather long and difficult process of introducing additional subjects or material to the study programmes: teachers need time to acquire material and to prepare the description of the discipline according to the state standards; company representatives review the content of the programmes and approve it;

then the curricula must be accorded with the Educational Department and then it can be implemented during the lessons. So, the process of curricula's updating is extended but at the same time we try to establish direct contact between students and companies through conducting lectures for students by representatives who are involved in the production process, through carrying out additional lessons on the topics that present interest to the companies.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

The successful development of the EUNU is particularly important depending on its cooperation with enterprises and companies of the real sector of the economy, leaders in the market segment. University signs agreements on cooperation and develops long-term partnerships with each of these business or industrial organizations. Strong linkages with enterprises and companies of the real sector of the economy is the key to match the content of the educational programs of vocational requirements of the labour market, as well as to guarantee the timely placement of students and alumni of the University.

EUNU has carried out a deep analysis on the existing problems in the realm of employability, development of university researches and educational quality and on the basis of the analytic results has developed a strategic partnership in several areas:

- identifying the needs of the labour market and providing early employment of students and graduates;
- joint development of content and training and methodological support of educational programs;
- joint support for undergraduate students practice, the implementation of business projects;
- development and standardization of requirements to specialists in various fields of knowledge;
- expert assessment of the quality of educational programs and the level of training of graduates;
- organization of training programs and training for staff of partner companies by the university professors and researchers;
- implementation and testing of effective mechanisms of cooperation of higher education with the commercial sector;
- conferences, seminars, workshops, study tours and excursions for students to the partner organizations.

SUSTAINABILITY OF THE GOOD PRACTICE

The cooperation between EUNU and enterprises is carried out and supported on the basis of the long-term agreements. According to the articles of these agreements, EUNU regularly addresses the leading specialists of the companies to conduct lectures, workshops for students and staff, also companies' representatives are appointed to guide the students' internship work, they control student activity during the internship period and evaluate their research papers. For every scientific conference that is organized at our University we attract employers and their representatives to participate in the conference presenting articles that could give a general presentation of their companies. Such events are the most effective to connect students with their potential employers as it happens very often that employers invite the most active students of the conferences to work at their organizations.

One of the most important forms of interaction between EUNU and partner enterprises is conducting questionnaires for employers who are looking for staff among the graduates of the university. EUNU sends out mailings with the questionnaire to managers of the partner organizations and a letter of appeal which states that by joint efforts of the university and business companies we can bridge the gap between university preparation and the requirements of modern production process. Thus, we can achieve coordination of interests between university and employers. The answers tend to come immediately, and hence we can state that the interest of employers in partnership with the university is very high. In the questionnaire, business leaders and organizations express their demands on the candidates, intent to hire a definitive number of university graduates if they will meet their requirements.

Also companies offer their own preferred forms of cooperation such as: individual training on request of the company, hiring students for part-time working day during the period of practice with the prospect of future employment, attracting leading specialists of the enterprises to guide the students' researches they make while studying at the university. There have been specific requests for graduates' of the determined speciality, and our department of employment together with the deans and head of chairs has been working on the selection of the required specialists. Respondents also answer for such important questions as the quality of the training of young professionals, the problems of adapting at the workplace.

TRANSFERABILITY OF THE GOOD PRACTICE

Reform of the education system in Ukraine is rather slow because the high public demand for education allows many institutions to adhere to the old strategy and to be guided the demand of the population, and not to the demands of employers and not to pay attention to the changes in the economy and society in determining learning outcomes. Leaders of these institutions have not realized that in the new environment education activities can be successful only if implemented programs will be able to flexibly follow the changes in market and labour conditions and the requirements of the major consumers, employers and students. Relevance of educational outcomes and the constantly changing demands of the labour market will allow graduates not only to find their place and base for career, but also to change it and to improve it, if necessary.

Currently in Ukraine and in other countries the practice of employers' participation in the educational activities is rapidly expanding. Employers assess the quality of education at educational institutions, because employers need assurance that at the labour market they will be able to find the qualified specialists who can start work immediately at the highest level.

For example, employers have started to pursue professional accreditation of programs in order to ensure that the educational process is properly constructed, and ensure the quality of training of graduates. Employers pay great attention to the assessment and certification of qualifications of graduates, because they believe that education creates a set of competencies and experience. Employers are increasingly interacting with institutions participating in making the request for the necessary training and qualifications of their profile, and in the evaluation of the quality and content of training of graduates. Thus, today the employers become the dominant customers and the appraisers of education quality.

Consequently, educational institutions, developing and implementing educational programs, should focus on the needs of employers and students, and create mechanisms that allow continuously monitoring changes at the labour market and the requirements of the main consumers of the education quality.

LESSONS LEARNT AND RECOMMENDATIONS

The best partnerships occur when participating organizations understand the importance of experiential learning and support students' growth in the workplace. Our practices presented in this paper have showed that a development of many formats of education programmes and projects through reinforcing cooperation between university and enterprises is essential, as it can satisfy societies' needs and meet the requirements of the labour market. Moreover, university and business cooperation opens effective ways of modernisation of education and researches.

Both university and enterprise must pay attention to the building of a highly effective administrative management team to ensure success in the education and research processes. Strengthening top management and administration at each level is a key component in the education and business partnership.

Both universities and enterprises have to jointly elaborate program training content, educational projects and scientific activities. The training content should include the new theories, technologies, and methodologies. On the other hand, it is worth mentioning that the training content is rather useful and valuable for students if it is integrated relevantly with the realistic demands from the enterprises. A training program which has achieved this goal is the most forceful and valid and is welcomed by the industry.

Both universities and enterprises have to calculate well program expenses in order to guarantee the partnership moving forward. We proposed to our partner organizations to invest finances into scientific laboratories, into new equipment for student research work and into developing student mobility. All our proposals included a list of feasible results such as enhancing students' competences who can become future workers at the partner companies, conducting researches upon the request of the enterprises, transferring knowledge and good practices from the university to the partner companies, carrying out trainings and lectures for companies' representatives by the university staff.

The communication between educators and company representatives is highly praised in the framework of the cooperation between university and enterprises. They should discuss diverse possibilities of interaction and develop jointly the research projects that present interest for both parties. This contributes to speed up the process of transforming these university activities into stable and fruitful partnership with enterprises.

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15. Mismatch of Graduates Skills to Labour Market Needs: Problems and Methods of Overcoming Them

Lutsk National Technical University, Ukraine

EXECUTIVE SUMMARY

The study examined the experience of Lutsk National Technical University (LNTU) to overcome inconsistencies between the abilities and skills of young professionals and labour market needs, the basic factors that influence the development of the education market and the labour market. Formed mechanism to overcome inconsistencies between the abilities and skills of young professionals and the needs of the labour market that provides general and specific functions, organizational, administrative, economic, social and psychological management techniques and tools.

Studied the experience: introduction course on the formation of the students practical employment skills in a market economy, promote employment unit for alumni of LNTU, informing students and alumni of LNTU of vacant positions at enterprises, institutions and organizations that meet their professional training, cooperation with HR departments of companies and institutions, providing organizational and methodological assistance to students in preparing resumes, conducting trainings on self-counseling on compliance with corporate culture of enterprises, institutions, organizations, clarity labour and professional interests; discussions with employers of varied disciplines and priority and the order of their inclusion in the training of Bachelor and Master degrees, forming continuous program of practical training for students in the enterprise, institution, organization, information about programs and training of students to heads of enterprises, institutions and organizations in order to select students corresponding to their professional training, practical training courses, training in specially equipped workplace, training in enterprises, institutions and organizations. A number of the measures can be used in the practice of other universities.

BACKGROUND INFORMATION

LNTU was founded in 1966. In 2008, the university got the national status. Today the University has 7 faculties, including the Faculty of Computer Science and Information Technology, Department of Environment and appliances and Energy systems, Faculty of Business, Accounting and Finance and four centers that deal with issues of Preparatory training, postgraduate education, distance education and promote employment of students and graduates.

Number of students in the 2012/2013 training year: 3,288 people on full-time study, 2,821 people on part-time basis. Currently, faculty of LNTU reached 432 people. Among them - 32 doctors of sciences, professors, 232 associate professors, PhDs, 16 academicians and corresponding members of specialized academies. University scientists present their portfolio at conferences held by Ukrainian and foreign universities. For the defense of theses on specialized scientific council at LNTU additionally attracted scholars from Europe, with the right to vote.

Approximately 6,300 students in 35 majors enrolled in Bachelor's and Master's degree. In

addition, the structural units of the University, namely the Technical College (Lutsk), Kovel Industrial and Economic College (Kovel, Volyn region) and Lubeshiv Technical College (Lyubeshiv of Volyn region) study 2000 people. The University Graduate School is for 106 people and doctoral - 4.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Irrelevance of graduates' skills to labour market needs

THE WIDER CONTEXT

Activities of higher education institutions offering educational services in Ukraine aimed at training professionals who will be leaders of the transition to market economy principles, and thus contribute to the welfare of the population, the development of the national economy. Partly labour mobility and the relative isolation of regional labour markets, lack of adequate labour market needs is one of the main problems of vocational education. This is due to the fact that universities of the post-Soviet countries are generally experts in traditional specialties and meet the growing needs of the population to a greater extent, not the economy. The consequence of this is the fact that in the country about 30% of graduates are not working in their field. We know that Ukraine's accession to the Bologna Declaration requires the implementation of the Declaration on the orientation of higher education for the result: knowledge of the graduates need to be applied and practically used. Quality of training of highly qualified specialists and their employment are particularly important.

One of the assessment tools of inconsistencies skills of the graduates for the labour market needs is to analyze the functioning of the university environment. The study of organizational environment is structuring impact areas according to criteria of political, social and economic factors. Ministry of Education and Science of Ukraine is the main body in the system of central executive authorities to ensure the implementation of state policy in the sphere of education, science, science and technology, innovation and intellectual property. Now in Higher Education of Ukraine there are 199 universities, 64 academies, 89 institutes, 243 colleges, 109 technical colleges, 118 specialized schools and 1 conservatory [1]. In higher education of Ukraine there are educational qualification of junior specialist, bachelor, specialist and master. Higher education is received by the state and local budgets, as well as the expense of individuals and businesses in full-time, evening, part-time and external studies.

In the 2012/2013 academic year the number of students of higher educational institutions of all levels of certification and ownership was 2 million 170 thousand people, including more than 60.1 thousand of foreigners from 146 countries, and in 2011/2012 academic year was - 2 million 312.8 thousand people, which is 142,8 thousand less than in 2013. [1] It should be noted that this trend will reduce the number of students traced over the last five years and is a consequence of the demographic crisis in Ukraine.

In higher educational institutions of III-IV level of accreditation study 1 million 824.9 thousand people, with the state budget are trained 767.5 thousand people, at the expense of local budgets - 18.3 thousand people, at the expense of individuals and entities - 1 million 039 thousand people [1]. The number of students in higher educational institutions of III-IV

accreditation - 401 person per 10 thousand of population. Each year, in the higher education institutions of III-IV accreditation enter more than 500 thousand people [1]. This suggests that in Ukraine there is a sufficient number of higher schools for free choice for applicants with desired place of study on a particular specialty. Competitors of LNTU actually are all the universities that provide education in the same areas and training programs.

This requires more active consideration of the choice of alternative programs for Bachelor and Master degrees according to the needs of the labour market. Lack of knowledge and skills obtained hinders business enterprises, institutions and organizations, and often inadequate skills are a major factor in unemployment. Note that the discrepancy between existing knowledge and skills are inevitable in transition economies, and the structure of knowledge and skills of the labour demand is constantly changing. Structural changes, accompanied by the emergence of new economic activities while curtailing other traditional national economic activities lead to the fact that the structure of knowledge and skills that are in demand in the labour market is different from the structure of knowledge and skills that are offered. The problem arises when the student received a diploma of higher education, seeks to find a highly paid job, sees that the knowledge and skills acquired at university are not sufficient for successful employment.

The main causes of discrepancies between existing knowledge gained by students and skills and labour which market demands are the following. Firstly, the education system does not react properly to changing labour market needs. Secondly, the labour market has been too slow in bringing the knowledge and skills of employees with the needs of jobs. This applies to the inflexibility of wages, lack of information about supply and demand, specific knowledge and skills, and limited movement of labour. A potentially important source of labour shortages is emigration of skilled labour [2].

The discrepancy between existing knowledge and skills and labour market needs significantly affected by the economic environment. To speed up the modernisation of Ukraine's economy, productivity growth and increasing demand for highly skilled labour required a favorable investment climate. The higher education system must better respond to the constantly changing needs of the labour market in order to provide students with comprehensive knowledge and skills that have wide application. The resulting education should provide solid foundation for lifelong learning. Graduates of schools of all types must be able to learn new skills to meet the demand for highly skilled labour. It is important that the learning process should give prospective employees not only professional, rigidly defined knowledge and skills but also non-special education, flexible knowledge, including ethics of work [6].

We have studied LNTU and consider it as open, complex and dynamic system that changes in time and space, subject to influences from the external environment and flexible to respond to the challenges and threats to operation. The study found that LNTU as an open system has the following properties:

- integrity: is the internal unity that provides connectivity at all levels and levels of management of LNTU. Integrity is manifested in the high professional level of the teaching staff, combined substantive and procedural tools of motivation, organizational culture, development of new educational technologies, understanding

and implementation of the mission and strategy of LNTU;

- differentiation would be such a organization of educational process in LNTU, which created the conditions that give each student an opportunity to reveal all of his potential educational opportunities;
- centralization: a decision-making and concentration of power at the top level management of university with the transfer of authority of such decisions to lower-level management departments of LNTU;
- dynamics and sustainability of development of LNTU;
- adaptability: to adapt to a changing environment, the maximum adaptation to the student's personality with its individual features, flexible response to their social and cultural change;
- uniqueness, which manifests itself in the development of educational and training methods, the proposed areas of training, levels of education.

LNTU must take responsibility not only for the transfer of knowledge and skills, but also learn how to most effectively use the acquired resources. Achieving these goals requires the active cooperation of LNTU with employers and their active involvement in the design, content and improvement of appropriate educational programs for Bachelor, Specialist and Master. It is essential to provide graduates the skills and knowledge that employers really need. Not narrow professional knowledge, adapted to a particular job, but broad knowledge and skills that will give them the opportunity to compete in the job market and qualify for higher wages. Accurate and accessible information on the labour market is crucial for students and people looking for work so they could reasonably choose the workplace. This includes information on employment prospects for different educational or professional groups. Every young person has to make a decision about what kind of education she/he should receive and what profession to choose. Ideally, this decision should be based on sound information about labour market prospects for each occupation.

The following key questions arise: "How easy can I find a job?" And "How much will I earn if I choose this particular career?" The objective of labour market information system is to provide answers to those questions. Adequate information includes data about trends in employment, unemployment, vacancies and wages depending on the profession and the region [3]. Labour market information is essential for the educational and professional development. In order to respond to the needs of the labour market, these institutions should have information on trends in demand for different occupations. They must know about what specific knowledge and skills employers need. Such information they can use when forming their curriculum and prepare proposals for training.

It is important that educational institutions collect and make public information about their employment situation of graduates [6]. A key measure in this area is the percentage of graduates who got a job for a certain period after graduation. This information gives an important signal about what schools and what courses are successful in terms of improving employment prospects of their graduates, in turn, creates a "market" services to education and training, clients or students who can make choices based on accurate information. This market will work even better with financial success, i.e. if funding of institutions will depend on the number, characteristics and success of students.

Employment services can play an important role in facilitating search for jobs [5]. These services include mediation in employment, job search assistance, counseling on career choices, focus on training courses and financial aid in the transition to another job. These programs, if properly developed, reduce the duration of unemployment and improve the correspondence between workers and jobs. In order for services to be effective in employment, employment services should have adequate access to jobs. In case of equality of other conditions that lower the value of the ratio of the unemployment / vacancy number, the more effective is the job placement services. Thus, for a constant number of unemployed job placement services are usually more effective if there is a high rate of penetration of the so-called jobs. Otherwise - if the number of vacancies relative to the number of unemployed is low - job placement services are largely ineffective [2].

RATIONALE AND INTENDED RESULTS

In order to improve the efficiency of LNTU, increase in competitiveness of the international market, reducing disparity between the knowledge and skills is necessary to introduce changes in the selection and shaping of teaching methods and training in technical and economic fields.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

Achieving synergistic effect of change in management at LNTU of overcoming disparities in skills graduates to labour market needs requires an integrated approach that includes both organizational and methodical way, social and informational support. It is known that the organization of the changes may affect any part of the educational process in LNTU, such as the level of specialization range of functional, teaching methods, separation of powers, management, coordination mechanisms and so on.

Change in management at LNTU - a set of sequential, interrelated actions to implement the functions of management, which are aimed at achieving the objectives and impact on the state of sustainable development of higher education institutions through changes in processes, functions, governance structures. In order to overcome inconsistencies skills of LNTU graduates to labour market needs, a series of measures were taken:

- Education department promoted employment of graduates of LNTU;
- Informing graduate students of LNTU of vacant positions at enterprises, institutions and organizations that meet their professional training, collaboration with the HR departments of enterprises, institutions and organizations;
- Providing logistical and technical assistance to students in preparing resumes, conducting trainings on self-counseling on compliance with corporate culture of enterprise, institution, organization, clarity labour and professional interests;
- Discussion with employers various disciplines and sequence of their inclusion in the programs of Bachelor and Master;
- Formation of training programs for students learning in the enterprise, institution or organization;
- Information about applications and time frame of training of students to heads of enterprises, institutions and organizations in order to select students who meet their professional training;
- Practical training courses, training in specially equipped training and workplace, training in enterprises, institutions and organizations;

- Introduction course on the formation of the students' practical skills at employment in a market economy.

Information on the implementation of these measures is presented in Table 1.

Table 1. Stages of management change in LNTU to overcome inconsistencies of graduate skills to labour market needs

Title	Stages of implementation	Responsible persons from the university	The responsible persons of enterprises, institutions and organizations	Result
1. Launch of the Business student centre	February 2011	Training Branch	Employers, Human Resources of enterprises, institutions, organizations, employment centers	Promoting employment of students, vocational guidance, motivation terminal, forming the base summary
2. Informing students and alumni of LNTU of job vacancies	September 2012, constantly	Center for Business student graduating department heads, managers of training	personnel departments of enterprises, institutions and organizations	Formation of resume database and job growth employment of students
3. Organizational and methodological assistance to students in preparing resumes, training	September 2012,	Center for Business student graduating department heads, psycho-diagnostic lab	Employment Center, Human Resources	Promoting employment of students, career guidance, high self-presentation of student
4. Content of the training according to the needs of the labour market	January-July 2013	Rector, academic department, heads of graduating departments	Managers of enterprises, institutions and organizations	Forming the list of courses variant to specialist training programs, priority and order of their inclusion
5. Formation of through an internship program for student learning in the enterprise, institution, organization	December 2012	Heads of departments, heads of practices, training department	Senior Staff from enterprises, institutions and organizations, Human Resources	The selection and placement of students that meet their professional training
6. Conducting	During the	Lecturers,	Heads of	Professional

practical training courses on specially designed job in enterprises, institutions and organizations	academic year, according to schedule	teachers workshops, managers graduating department, training department	departments, companies, institutions and organizations	adaptation of young professionals in the workplace, the assessment of their knowledge and skills required by the employer, employment promotion of specialists
7. The introduction course "Determinants of successful employment in the specialty"	Since 2013	Heads of departments, deans of faculties	HR departments of companies, institutions and organizations	Forming students practical skills of employment in a market economy

In February 2011 LNTU was one of the winners of the International Anticrisis Humanitarian Program "Renaissance." Name the project "Increasing employment of rural youth and students". Implementation period is from April till September 2011. Aim is to increase employment of rural youth and students by informing target audiences about employment opportunities, targeted assistance with employment and job search skills and one's own self-employment. The legal basis for the creation of the Center for Business Students has become the order of the Cabinet "On improving employability of graduates of higher education institutions." In 2011, in LNTU was created the local professional orientation center, i.e. Center for Business students (Figure 1).



Figure 1.Center for business students in LNTU

In the Center staff of the employment center, work with students, give consultations to help with career counseling. In addition, in the location they show videos on workers' occupations, on the stands they can read about employers who are invited to meet with students. Young professionals have the opportunity to see the information of vacancies, Job presentation motivational terminal stands with offers of work, descriptions of occupations, and data of businesses. Also presented the economic map of Volyn, barometer of occupations (Fig. 2), periodicals about employment opportunities, catalogs of successful entrepreneurs, employers, vocational booklets and more.



Figure 2. Informative Booth "Barometer of professions" Occupational Guidance Terminals are located near the business center for students

Also, young people can work on computers with Internet connection and have access to job search websites. Students can review the vacancies on the websites of Employment Center and create their resumes for finding jobs that interest them. In April 2013 established the practice of informing alumni and students of the availability of vacancies in the business field and companies. Students become acquainted with, professionally orientated materials, get advices.



Figure 3. Computer diagnostics of professional orientation of employees in Business Centre for students.

The creation of such units as the center of business student can not resolve the mismatch between the skills of graduates of the labour market, but to promote and assist in finding the right job. After all, the job search process of unemployed youth faces with certain psychological difficulties. The reason is the lack of individual internal readiness for action, inability to change presets, the motivation of behavior in the new market conditions. In the current market conditions is not possible to organize a referral to recruit graduates as in Soviet times. However, many students need and providing logistical and technical assistance in preparing resumes, conducting trainings on self-counseling on compliance with corporate

culture of enterprise, institution, organization, clarify labour and professional interests



Figure 4. Seminar on engineering job search in LNTU, September, 2012

The university held job fairs, meetings with employers, conduct career guidance seminars on job search techniques, as well as meetings with successful alumni of the university and tours to the best enterprises of Volyn, which are expected with great interest by young professionals. During the “fair trades” (vacancies) were discussions with heads of graduating departments, with employers of enterprises, institutions and organizations of different ownership. Also was discussed varied set of disciplines, priority and sequence of their inclusion in the programs of Bachelor and Master degrees (Figure 5).



Figure 5. Sitting of deans and heads of departments, discussion about the content of the variable part of professional training programs, February, 2013

In order to quickly adapt to professional jobs in September and October 2012 on the numerous inquiries and offers of employers graduating department heads formed a program of practical training at the enterprise, institution or organization during the whole period of studies. Practical applications were approved by methodical commission of LNTU and published on the official website. It became possible to arrange continuous industrial, professional, undergraduate and research training of students at free workplaces. As a result of the professional practice of students in enterprises, institutions and organizations more than 55 persons were able to find work (Fig. 6, 7).



Figure 6. Students of specialty "Finance" invited for paid practices at "PrivatBank", after which eight people were hired



Figure 7. Students of specialty "Engineering Mechanics" in practice at "Lutsk stock company", after which five people were hired

To acquire practical skills directly in the workplace graduating departments set up their branches in leading companies, institutions and organizations. One of the important areas is conducting training courses in specially equipped workplaces in enterprises, institutions and organizations (Figures 8 – 10).



Figure 8. Practical studies on the subject "Statistics" in the Volyn Regional Department of Statistics

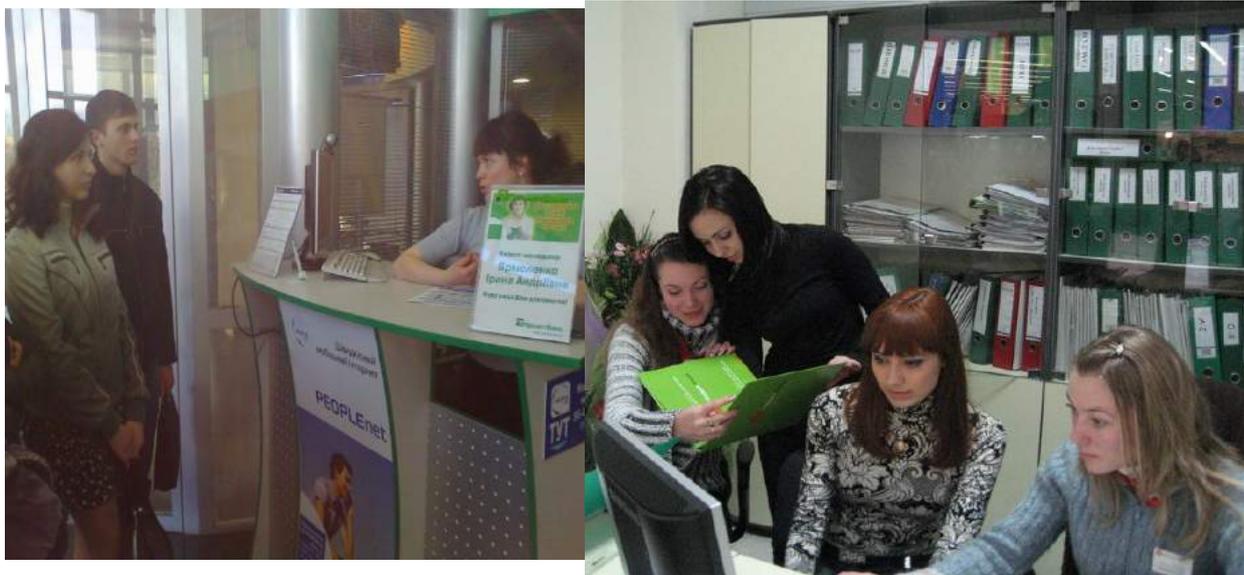


Figure 9. Practical studies on the subject "Marketing in the bank" in "PrivatBank"

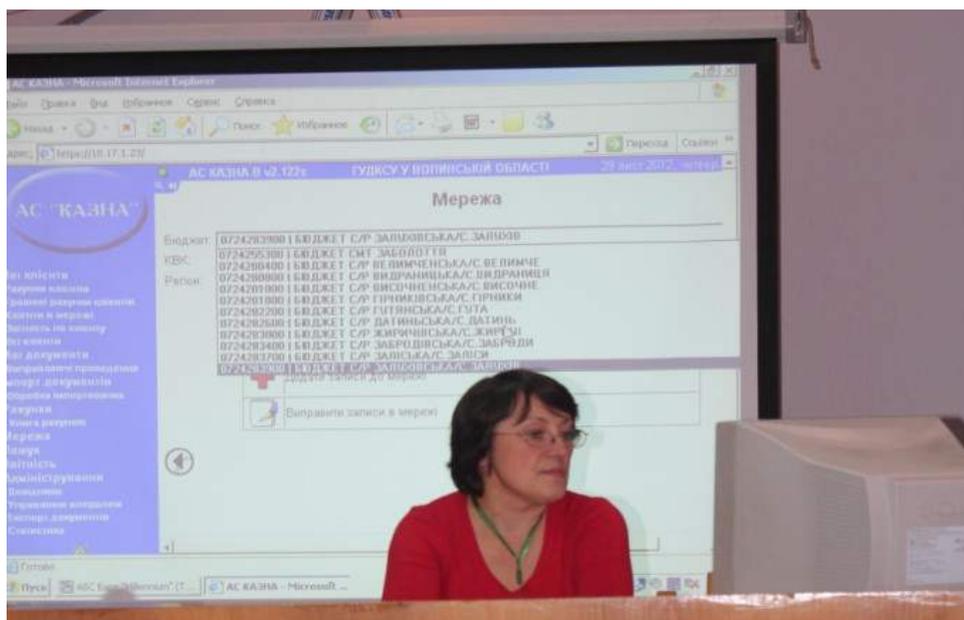


Figure 10. Practical studies on the subject "Treasury" in the Department of the Treasury of the Volyn region

The main purpose of these sessions - to prepare future professionals to select and use the most suitable methods of work in preparing, organizing and conducting at the new workplace, training, use of training time and material and technical means. Students acquire abilities and skills training for the workplace under the guidance of a teacher and instructor, as well as experience working in teams, decision-making skills, conflict management, which will help in the practical application of the knowledge and skills during training and reduce the occupational adaptation for new workplace.

In pursuance of the Cabinet of Ministers of Ukraine on August 27, 2010 № 1726 "On improving employability of graduates" and to shape students' practical skills in employment in market economy in 2013 in the educational process will be introduced teaching course "Determinants of successful employment in the specialty" for students of educational qualification of Specialist and Master. Responsible for the formation of syllabus and introduction of the course are heads of graduating departments.

Thus, to eliminate the existing disparity between knowledge and skills of alumni of universities and to minimize the stress impact on them in entering the labour market must be involved two equal sides - the labour market and the academic community, which should manifest itself in developing appropriate forms and methods of interaction and cooperation between participants in the education market and also the labour market. In the nearest future the work of the university to promote the social, psychological and professional adaptation of graduates and employment support should be targeted, focused on helping graduates to select professional activities which are the most appropriate to their interests and abilities in the specialty and to engage in work with minimal start-up costs for their own needs and the needs of the national economy.

RESOURCES REQUIRED AND USED

Phase 1 - Creation of a business center for students took place due to help from anti-crisis humanitarian funding program "Renaissance." Funding in the amount of 25,000 grivnas was done by implementing the four steps.

First stage - the creation of a permanent consultation office for career counseling and job placement. Action: organizing of workplace for a consultant in building "B" of LNTU on the first floor near the admissions committee, namely the acquisition of hardware and software, office equipment, providing Internet connection. The result: organized one workplace for a consultant in career counseling, internships and employment. Upon expiry of the financing of the project in October 2011, the expenses are on the University.

Phase II - Development of information system of professional orientation for students focused on specifics of technical university, which envisages the possibility of testing as graduate students of LNTU and as well as those who want to enter the University. Activities: a functional model of the system, based on existing technical solutions, involvement in professional counseling of psychologists for creating and shaping the evaluation of psychological and professional characteristics of persons tested. Writing application code and its implementation. The development of the system was carried out by a group of researchers from the Department of Computer Technology. The result: the development of a program of professional orientation test.

Third stage – Creating of a database of vacancies and data bank of graduate students who are searching for work. Activities: systematization of already established contacts with leading companies and institutions in Lutsk and Volyn region, which take graduates for the practice in technical and economic specialties, establishing new contacts with personnel services of businesses through direct mail about staffing needs for the future (2 - 5 years). Establishing contacts with other Internet networks to expand the base of existing vacancies in other regions of Ukraine and the need for technical specialties. Provision of consultancy services by Business Consultant Centerto students in completing resume and formation of a data bank of graduates not employed or not employed in their field. The result: generated database and constant update of information on vacant offers and vacancies.

Fourth stage - Organisation of "fair of trades" for students and graduates of technical and economic fields with representatives of local authorities and businesses. Activities: The organization of the event included the approval of candidates and invited representatives of employment agencies, heads of departments of Family, Youth and Sports from the City council, representatives from large enterprises, small and medium-sized businesses with presentation experience of a business, representatives of youth labour centers and other community organizations working on the problems of youth employment in cities and villages, local media. The result: there was information about the Center of Business student and its location. Made a series of awareness-raising posters of problems when finding a job. The info is on the official website of LNTU.

FACILITATING FACTORS

Clearly set objectives to overcome inconsistencies between the abilities and skills of young professionals and labour market needs. The commitment of the project team to stated objectives. Competent project manager. Competent, communicative project manager from LNTU - Professor Z. Gerasymchuk, who has the necessary technical and administrative experience in managing educational institution. Support from the authorities, especially from the Rector – Professor V.V. Bozhydarnika. The rector, as an interested party in the

preparation of highly qualified skilled labour is in constant search for improving the quality of education in LNTU.

- Qualitative feedback: all stakeholders in addressing inconsistencies between abilities and skills of young professionals and the needs of the labour market should be able to study the situation and make appropriate suggestions and corrections.
- Responsiveness to customers and consumers of education services. All potential consumers of educational services receive accurate information about faculty LNTU training program for Bachelor and Master courses for training, number of credits, etc.
- Continuing members of the project. HR component of the project for the duration of its implementation as much as possible to remain constant. Frequent changes of personnel can lead to dissipation of accumulated group experience.

CHALLENGES AND OBSTACLES

- Lack of resources for the financing of development in terms of material resources of LNTU. For current limited budget funding of higher education institutions of all types of ownership have to provide educational services on a commercial basis.
- Irregularity in state financing of regional universities, ignoring the needs of specialists in different profiles, the maximum number of students that can prepare universities, educational institutions need in budget funds and more.
- The need to adjust the size of tuition fees, which is not consistent with the wage.
- Poor quality of information support in LNTU. Lack of necessary information for the project about its objectives, status changes, organizational conditions and customer needs and consumers of education.
- The need to find sources of increasing and diversifying funding of higher education in Ukraine.
- The need to create appropriate conditions for conducting fundamental and applied research in universities, which in turn will serve an additional source of funding for higher education in Ukraine.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Innovative features of the good practice include:

- a new model of university management (technology: the formation of the management team, training of the teaching staff to work in new conditions);
- a new model of educational space of the university, which provides an informed career choices based on diagnostic of professional choice, spiritual and aesthetic values, the implementation of optimal psycho-pedagogical conditions for socially adapted individual, capable to realize their potential (technology: learner-oriented; innovative and game studies, development of creative activity of all participants in the educational process, psycho-pedagogical correction and psychosocial care);
- a new model of professional self-determination according to the needs of the labour market (technology: training of professors and lecturers to work in the new environment, the development of the competitiveness of universities, differentiation by professional interests and the needs of the national economy, student- activity-establishment and development of creative personality, competence development).

SUSTAINABILITY OF THE GOOD PRACTICE

In order to overcome inconsistencies skills of graduates to labour market needs we group the following methods of management. The economic management discussions with employers assign a set of variable subjects and motivate their inclusion in the programs of Bachelor and Master degrees. For organizational and administrative management will include: introduction course on the formation of the students practical skills of employment in a market economy; education department to promote employment of graduates, the formation of an internship program for student learning in the enterprise, institution, organization, practical training courses on specially designed educational and workplace training in enterprises, institutions, organizations. Information on programs managers of enterprises, institutions and organizations in order to select students who meet their professional training.

Socio-psychological management assign inform graduate students about vacancies in enterprises, institutions and organizations that meet their professional training, collaboration with the HR departments of companies and institutions, providing organizational and methodological assistance to students in preparing resumes, training of self presentation, advising on compliance with corporate culture of enterprise, institution, organization, clarity labour and professional interests.

TRANSFERABILITY OF THE GOOD PRACTICE

Improving technology training - the basic unit of teaching and educational process that creates a mandatory level of volume and quality of knowledge and skills that should have a graduate to get qualified, and developing more flexible system of vocational education. As part of this trend we particularly emphasize the importance of improving the organization of practical training graduates including list of subjects of varied professional training, conducting workshops in specially equipped areas of training in enterprises, institutions and organizations.

It is necessary to expand the authority of office business center of student in recruitment for organizations with advanced students, graduates, and their target training to meet the requirements of employers and the particular organization, because every organization is interested in receiving professional with a minimum term of adaptation to production conditions.

It is necessary to prepare graduates for the acquisition of stress management techniques in entering the labour market. In view of the stages of development of stress disorders (acute stress reactions, posttraumatic stress disorder, adjustment disorder) need to use tools and strategies for managing stress on the possible mismatch between the abilities and skills of young professionals, between the perceptions and experiences of the first work, on labour relations in the team and so on.

LESSONS LEARNT AND RECOMMENDATIONS

Measures of marketing activities of LNTU are aimed to overcome the discrepancies between the abilities and skills of young professionals and labour market needs and developing partnerships with business labour market: businesses, organizations, government agencies, community organizations can be recommended for use.

In particular, deserve implementation experience in:

- Development of social partnership and providing professional support adaptation and practical preparation of students for the real conditions of production, from the junior courses developed by cross-cutting programs of practical training, conduct training on educational-training places in enterprises, institutions, organizations, promotion of organizing internships and employment practices;
- Organization of seminars and workshops aimed at developing skills of self-presentation, resume writing, professional portfolio, etc.;
- Study and analysis of the needs of the labour market and employers to better social, psychological and professional adaptation of graduates;
- Promoting graduate orientation in determining the most appropriate to their interests and abilities places of work according to their specialities;
- Transition from short-term to long-term "university - industry", relationships by creating based on partnership and mutual trust with employers, by concluding long-term agreements on cooperation and collaboration.
- In LNTU was created unit - Center for student employment. To prepare students for employment should include the organization of contests "Best in profession " jobs fairs for students and alumni, "Career Days" ,round tables with graduates, scientific conferences involving employers and representatives of public institutions, authorities and others.

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16. Implementation of Information Technologies at The Comrat State University

Comrat State University, Moldova

EXECUTIVE SUMMARY

Comrat State University (CSU) started the implementation of IT technologies in education in 2009 with usage of Learning Management Systems Moodle and computer testing software like AD TESTER. During that period some experiments were carried out in order to find an appropriate model for e-learning education on specific subjects in our university. The essential goal is connected with the application of open source software and its adaptation to our vision of an effective educational process.

We use several beneficial ICT tools in teaching and learning like Wiki systems, Learning Management Systems, Thin-client classroom, Web-conferencing and Desktop sharing tools. The authors are experienced with advantages and disadvantages of pointed ICT tools and the current study presents some successful examples of their implementation. Our main conclusions are connected with the integration of these different and separate ICT tools into one basic system. According to us this comes up the best approach that covers the whole process of education.

BACKGROUND INFORMATION (0.5 p.)

CSU is a new higher educational institution establishment in Moldova and was founded in 1991. It is a dynamically developing university aimed at training and providing the southern region of Moldova with highly qualified specialists. CSU have about 1800 students and consist of 4 Faculties, 17 Departments and 7 Centres that give training on 34 specialties. Teaching staff of the University consist of: 8 Professors, 45 Associate Professors, 95 Professor Assistants and 74 university lecturers. Educational process at CSU is organized in full-time and part-time courses. Department of IT, Mathematics and Physics of the Faculty of Economics is one of biggest Department at the university and provide educational Programmes (BSc and MSc) for following specialties: Computer Science, Mathematics, Mathematics and Computer Science, Applied Computer Science, Information Technologies.

CSU provides different education training Licentiate, Master and Doctorate Programmes. Languages of instruction are Russian, Gagauz and Romanian. Some courses are available also in English, German, Greece, Bulgarian and Turkish languages. CSU is successfully implementing the Bologna process, contributing to the integration of the higher education of Moldova into the European Higher Education Area. CSU has been involved in many international projects including Tempus projects. CSU is strongly committed to the processes of internationalization and lifelong learning.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS

ADDRESSED

Increasing use of ICT in education

THE WIDER CONTEXT

Introduction

Continued development of the learning process involves the usage of new educational approaches and accompanying technologies. Trends in modern education are associated with changes in the role of participants in the learning process. Teachers explore and apply various means to improve the interactivity and involvement of learners not only as passive listeners, but as active participants in the training process. Students are actively involved and are responsible for their own learning. The development of ICT is a prerequisite for the existence of many diverse technical resources that can be used in training. In front of teachers stands the important task to choose those means that most will reflect the specifics of the subject area and the characteristics of learners.

The idea of the active implementation of e-learning was adopted in CSU in 2010. More and more teachers from different departments and faculties of the University consider E-learning as a means of achieving a new model of teaching and learning. Since then they continually explore different ICT tools that affect various aspects of teaching. We implement various ICT tools in our practical activity seeking a suitable model for the realization of E-learning, consistent with the specifics of curriculum subjects.

The main goal of the current work is to summarize the results of our studies and present some specific ICT tools used in learning process. The work distinguishes some of the main advantages of ICT tools, which have become a reason for our choice. It sets out some performance after their application in our teaching practice.

Benefits of E-learning

E-learning is a learning process based on the usage of computer and communication technologies. There is constantly development of electronic tools that can be used to realize each stage of training – preparation of the learning materials, their delivery to the learners, the processes of learners' evaluation and knowledge control. Each of these tools allows the implementation of a specific model of E-learning with different form and degree of learners' activity. The presentation of multimedia information (text, graphics, audio and video materials) is one of the important advantages of E-learning. Based on modern information technologies multimedia elements can be used in creating electronic learning content.

In E-learning the learning content is actual, dynamic and accessible. There are opportunities for easy and quick actualization of the learning materials and adding new ones. E-learning includes wide range of activities and assignments which develop different students' skills. Learners have access to many learning resources through remote multimedia databases. E-learning presumes enhanced communication (synchronous and asynchronous) and interaction between participants in the learning process in various forms. Through actual feedback teachers and students receive information about the level of assimilation of the learning content, qualitatively and quantitatively assessed achievements, the effectiveness of the training. Feedback is a corrector both for teaching and for students' future work and activities. Using feedback we can correct some weaknesses of the educational process in

time. This is the way to achieve greater efficiency of training.

Like any form of education, E-learning has some drawbacks. Some of them emanate from the weaknesses of the technologies themselves, by which it is implemented. Others are related to the waste of time and labour consumption in developing learning materials. Teachers invest in time and money without being aware in advance with the final didactic results. They have to learn new information and educational technologies constantly. They have a tough job to choose the most appropriate means of training, taking into account the specifics of the subject area and the specificity of the learners. Development of the methodologies units for each course (subject) requires considerable expenditure of time by teachers to explore the opportunities of available software tools and to adapt them to the specifics of the subject area. It is very important to avoid shifting the focus of training – learners should learn the learning materials, and not make more efforts to learn how to use ICT tools.

Some drawbacks of E-learning have overcome with the development and improvement of ICT. When teachers select the specific electronic means, taking into account the characteristics of the situation and E-learning is combined with traditional forms of training, the results can be encouraging. In recent years, WWW is used actively as a virtual environment in the educational process. The specific features of Web-technology assume quick realization of all learning activities. Web-based education acquires new dimensions and qualities and becomes accessible from the most remote parts of the world. The main aspects of E-learning are: pedagogical, software-technological and organization-management. Implementation of E-learning is related to knowledge of software, educational and management technologies.

ICT tools in teaching and learning

The usage of ICT tools in the learning process can be viewed from different perspectives. ICT tools can be:

- Subject of study in certain curriculum subjects;
- Aid in the conduct of training;
- Environment in which training takes place.

We teach subjects in the field of IT, and therefore cover the three aspects of the use of ICT tools. We analysed what stages and aspects of training are realized successfully and effectively with the implementation of various ICT tools in the educational process. It is important to determine which tools are best suited to carry out: training and preparation of students, self-study and self-evaluation by the students themselves; assessment – formative (during the training itself) and summative.

One of the first steps towards the usage of information technologies in education is a visualization of the learning process. For several years the visualization of lectures in all subject taught at the university relies on multimedia tools. The visualization takes place in organizing seminars, exercises and testing of knowledge in most of the courses.

RATIONALE AND INTENDED RESULTS

Implantation of information technologies in education in the University is one of the

necessary components allowing to small universities to support the high level of training of students and to be at the advanced edge of education science and technologies. In results of introduction of IT of technologies in CSU is increasing of learning efficiency and also implementation of the best interaction between school, university, society and industry is expected. Introduction of information technologies in the education in the university meets the requirements of the labour market and allows to university to train high quality specialities for economy and industry of Moldova.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The Department of Information technologies, Mathematics and Physics as well as Centre of Information technologies are both responsible for implementation Information technologies, new software and hardware in the education process in CSU. The Dept. of IT, Mathematics and Physics already has 4 year experience on implementation IT technologies and e-learning systems in the education in framework of several TEMPUS Projects (e.g. TEMPUS CRUNT). This Department also have closely cooperation with private and public sectors too. The good example of this collaboration is the collaboration with Mikrotik and AITEC SRL companies in framework of Network Academy. As result of this collaboration the 12 teaching and engineering staff from Department of IT, Mathematics and Physics and the Centre of Information Technologies of CSU has participated in the free trainings focused on network technologies and obtained international certificates of MTCNA, MTCRE and Mikrotik Academy trainers.

Moreover, both companies Mikrotik and AITEC provided necessary network equipment (routers, switchers, software, wi-fi access points) free of charge for creation network laboratory at CSU. During this collaboration the Teaching Staff of CSU and staff of the Mikrotik and AITEC Companies elaborated the new modern curriculum and education materials (books, guides, laboratory tasks, etc.) on the network technologies which is successful implemented in the educational process at the CSU. It is important to mention that authority of CSU is fully supported all initiatives and collaboration between CSU and private and public sector, and in their view it is important for future development of CSU as modern education institution, as well as for students – this allow to student to obtain necessary knowledge's and skills according current labour market needs.

Implementation of e-learning is linked to the growing need for educational software for all levels of education. Some departments (e.g. Dept. of IT and Dept. of Economics) of CSU have specialized software for individual learning units, which is used for: visualization, performance of practical tasks, examination of the records of seminars, monitoring. Other departments use software for solving professional tasks: preparing rations; determination of population genetic parameters, breeding value evaluation, economic analysis of the company and etc.

Market offers a variety of products, but for most of them customers have to pay expensive licensing fees. We are interested in free software (open source software). It gives users an access to the source code of the programs and they may use it freely. We consider the free software as a serious alternative to the popular commercial products currently used in the training on subjects in the field of Information technologies. The usage of free software restricts the software piracy. There is an opportunity to learners to explore new products,

which are free in most cases; have various features and can be customized according to user needs.

Free software in CSU

The benefits of free software are indisputable. Some of the advantages of using free software in training follow here.

Saving money Education sector does not produce tangible goods, so educational institutions rely on external financing in most cases. Often upgrading of facilities has been slow and difficult process. The educational software is expensive. Although in most cases there are different preferences for educational institutions, funds for the purchase of software are not enough. One possibility is to purchase licenses for certain proprietary software, but they have a period of limitation. After the terms of the licenses are expired the usage of the products should be considered as a software piracy. At the same time there is no license fees for free software if any, they are within acceptable limits. The educational institutions can save money in the process of upgrading the equipment. They can choose from the great variety of free products an appropriate product, which requires weaker computer configurations but at the same time offers better opportunities.

An impulse to improve knowledge in the field of software programming. The opportunity to explore and learn programming codes of the products can stimulate students to deepen their knowledge and skills in this area and consequently they can contribute to the development and improvement of the programs.

Educational role. The principles underlying in the development and distribution of free software are important life rules. Their perception of students plays an important role in their future development as people and citizens of the society.

All these advantages have directed us to use free software in education at CSU. Free software can be used in education in three main ways that have successfully realized at CSU:

As an operating system and environment. Due to reliability and security there is an increasingly implementation of free software as a platform for networking, Web applications and etc. Operating system Linux Debian, Web server Apache, the database MySQL, programming languages – PHP and HTML, Learning Management System Moodle form the software platform of the Distance education at CSU. They are translated into Russian, Romanian and English, there are graphical user interfaces that are easy to use, and the system can be administered remotely.

Applications running on the desktop. On the IT subjects students study free software products installed on operating system Windows: office suite OpenOffice.org, Web browser Mozilla Firefox and e-mail client program Thunderbird. We use Russian, Romanian and English localized versions of these products. Our observations show that they are absorbed much better than traditional products by students. Learners are interested in them and install and use the products on their own computers.

As a new desktop. A computer lab with 10 thin-client machines, built on Linux Server Terminal Project, offers a work environment of Linux operating system through the terminal access to office suite and programs for the Internet.

Learning management systems

Learning Management System (LMS) is software for organizing and managing the educational process. This includes means for accessing online learning content, creating and organizing learning activities, tracking of learning, interacting between participants in the

educational process. The main focus of LMS is the management of the learners, monitoring of their progress and the performance of different types of training events and activities. LMS are web-based. They provide and facilitate access to the learning content and remote system administration.

LMS Capabilities

As far as their use in the field of education, LMS provide training opportunities for:

- **Content management.** The learning content is stored and available online. This allows for online searching, which is facilitated by the resources available for indexing content.
- **Learning management.** LMS manage the learning curriculums, the processes of students' assessment and recording the results of these processes. The teachers receive feedback about the learning process. Based on these scores they can perform various analyses and consequently make adjustments and changes as needed to improve the quality of training.
- **Content integration.** Supporting generally accepted standards such as AICC and SCORM makes it possible to import and manage e-learning content what is platform independent.
- **Interaction between participants in the learning process.** Communication between participants is synchronous and asynchronous and it is implemented in various forms - discussions, e-mail, videoconferences, forums, chats and more.

Our choice – LMS Moodle

From the available learning management systems, our choice was the open source LMS Moodle (Modular Object-Oriented Dynamic Learning Environment).

The attractive features of consideration were:

- Platform allows being adapted for many operating systems (Windows, Linux, Sun and UNIX) and software environment (Mysql, Postgresql, MS-SQL Server, Oracle and Access).
- Moodle can be installed at an institutional server and allows establishment and maintaining of courses from different categories kept in a catalog at a portal page. This way can be covered wide area of subjects and topics.
- Moodle supports more services than others concerning course activities – Assignment, Choice, Forum, Journal, Resource, Quiz and Survey.
- Available course formats (Weekly, Topics and Social) give the templates for course setting, which facilitates the teacher design work.
- There are opportunities for uploading files of various formats that allow usage of materials from previous ordinary courses and easy extension of existing courses.
- There are opportunities for synchronous and asynchronous communication between teachers and students - via e-mail, forums, and chats.
- Moodle supports many languages with opportunity to add extra ones.

Training activities in Moodle

Through LMS Moodle may be implemented various learning activities:

Storage of learning materials. The system allows publication of materials for lectures, exercises and seminars in different formats that can be used by students for preparation and self-study not only during the semesters, but also during the examine sessions. On our courses Communication and Information systems, Internet technologies and Computer text processing and presentations, materials are published in three formats – pdf, doc and ppt.

Assessment and self-assessment through tests. Using the tests, the teacher and students assess the level of assimilation, comprehension and understanding of the learning content.

Although in most cases tests are perceived as a means for summative assessment at the end of a term or school year, they can also be used for self-assessment by students after lectures. The questions can be multiple choice or open questions – short answer. There are two possibilities – feedback includes correct answers or not. In the latter case, students can repeat the test, because the correct answers are not given. They can analyse and revise the mistakes they have made. Thus, tests not only give an idea of the extent of absorption of the material, but also become a means to improve the learning process. Therefore, they can be regarded as one of the activities accompanying the formative assessment.

Assignments. We use these activities in Computer text processing and presentations courses and in Information systems and Internet technologies courses. Assignments are learning activities where the teacher gives specific tasks to students – usually the task requires searching for information from different sources and evaluating it; classifying and comparing the information. Based on gathered information students draw conclusions on the problem and present them in the form of presentations. The students upload their fulfilled assignments in any format to the server. The teacher makes comments and reviews the students' work. Students are allowed to revise their work based on the teacher's comments and upload it again.

Peer assessment. Peer assessment activities are part of our Computer text processing and presentations courses. This activity is an opportunity for comments and reviews of students on a sample work, which may be given by teacher or be made by a student from the course. LMS Moodle offers a module Workshop for peer assessment activities. Once the task is given it is necessary to be discussed and established criteria on which the peer assessment will be based. Using module Workshop students need to provide reasons for their reviews and can be commented by each student in the group. The teacher also comments and assesses students' reviews.

Communication. To achieve a constructive exchange of views between the teacher and students can be used the available means of communication provided by the system Moodle – e-mail, chat, forum, blog. Communication can be performed both synchronously and asynchronously. The system Moodle is open to add new learning activities through developed modules. This enables expansion and diversification of techniques applied in teaching.

Wiki systems

Technology Just-in-time Teaching

The activity of learners is an important moment in the learning process. When learners are more active the training itself improves. To enhance the activity of students in the learning process we cannot rely solely on traditional forms of so-called academic style. There is an increasing emphasis on educational technology, which is based on the following: before each session learners perform Web-based tasks, which examine the level of assimilation of the leaning materials.

Students prepared separately to be able to deal with the tasks. Teachers assess the level of students' knowledge and become familiar with the problem areas. Activities during the exercise are determined by results achieved in the execution of preliminary tasks. Feedback is the basis of the technology JiTT. An important point is the active participation of learners and their contribution to the presentation of the learning materials.

The objectives faced JiTT are aimed at increasing the effectiveness of training during the

exercises; extracting maximum results and benefits of self-preparation of students and creating team spirit. An active learning environment in which students participate in the presentation of the material and interact with both the teacher and each other is much more effective than traditional, in which the active side is the teacher and students are passive.

There are various specialized Web based training systems that can be used in order to apply in practice JiTT technology and to maximize the results. Most of these systems can be a source of information that learners use in their preliminary preparation on the topics for discussions with the lecturer. Unfortunately, students cannot change the learning content. It is limited to the proposed lectures, exercises tasks, materials for self-study and course assignments by teachers.

Our idea was to expand opportunities for students to:

1. their preconditioning – students not only get acquainted with the learning materials, but also take part in its formation and help to diversify the learning content.
2. work on individual tasks – group or individual projects. Projects provide opportunities for learners to work thoroughly on more complex problems – issues related to gathering; assessing and classifying information about particular topic of the learning content. These activities continue over a long period of time and during the length of the project, teachers can observe learners' planning, development of ideas, and their ways of thinking. Group projects require team work, communication between participants and can be used to develop the abilities of learners to work together.

In order to realize these goals, we focused on exploring the possibilities of Wiki systems and their implementation in the learning process.

Nature and benefits of Wiki systems

Wiki is server software that allows users to create and edit content on web pages using a web browser. Wiki supports hyperlinks and has simple text syntax for creating new pages and links between pages. The usage of Wiki is related to understanding of the concept of open or free editing, which is not easily perceived as a concept, but there is a new interesting social impact. In the medium of Wiki permanent users can create and edit any page in the web site. This is the epitome of the democratic idea of the benefits of Web both for professionals and non-specialists.

Wiki systems are simple and effective tools for knowledge management and collaboration. They are the repository of ideas and tips on programming, social experiments, massive online encyclopaedias, tools for sharing information within an organization and beyond. Their main advantage is that they are easy to learn and use, unlike other complex systems for knowledge management. Knowledge is not static, it does not remain locked in the file system, hard drives and servers. It is available in real time and in collaboration with other users. Dynamic knowledge is the result of the fact that every user of a Wiki system can edit pages, providing always actual content.

The protection of information is indicated as a disadvantage Wiki systems by the opponents of the idea of open information. In these systems it is practically impossible to lose information because the publicity is a defensive mechanism. These systems rely on honesty

and responsible behaviour of consumers. The administrators of the systems can forbid anonymous users to make any changes to prevent unauthorized changes to the sites. A secure data protection is the maintaining a history of changes made by different users, and the opportunity to return to a previous version on pages.

Our choice – MediaWiki

There are different Wiki systems, but our attention fixed on the relatively popular MediaWiki. Apache, PHP, MySQL and Perl are necessary for the functioning of the Wiki systems. There are several approaches to installing basic packages, which are the medium needed for a Wiki system. We used Lampp package for Linux. Installation of MediaWiki is a Web-based, interactive, with a comfortable interface and takes several minutes.

In the environment of the installed Wiki system we created a site where learning materials are available. Course content (for example a course Communication and Information Systems is usually structured in several main categories: lectures, exercises and other alternative topics. Each lecture is on a separate page. Registered students have rights to add content to the lecture, discuss it, and offer new sources of information on the topic of the lecture. The administrator can use the history of changes of the page to determine whether students have added valuable information and therefore to assess their work. Not only teachers but also other students can control what their colleagues have added and give their opinion in the discussion.

The materials on a given topic are available to students before the lecture in real time. Students are informed of the schedule of course for which topic should prepare. In accordance with the idea of technology JiTT they direct the lecturer to problematic and uncertain moments in the topic. The lecture passes in the form of a seminar. The current state of students' knowledge on some topics is verified by tests or individual assignments that they do within a week. Pages with learning materials have links to many other resources of information about the topic. There is an opportunity to search by keyword within the site.

To the content of the course on Communication and Information Systems we added the option for group projects. The group project is related to gathering and presenting information about particular topic of the learning content. A team of students is formed. Each student in the group works on separate item of the project and publishes his results. Other students in the project can correct, edit and add new information. The students work together as a team, add, expand or change the published content. All these activities include peer assessment, even if in a less direct way. Students may consult with the teacher. He helps and guides them in their work to correct some inaccuracies. Communication between them is verbal or written. The systems provide means for e-mail, chat, forum and feedback is immediate and in real time.

The work on the realization of our goals has led us to some useful conclusions. They are related to the students' attitude to the Wiki systems and to the new role they play in the educational process. The students show continued interest, they learn new tools for work - language for editing in MediaWiki. The chosen technology for training and the means for its realization are a promising direction for increasing the students' activity in the learning process. We use MediaWiki for creating courses on all subjects of IT field taught in CSU.

Online meetings

Tools to collaborate in real time are used increasingly in modern education. They provide a rapid, almost instantaneous, context and feedback in the learning process. In this model of training students can participate actively in the learning process. There are opportunities for active communication between participants in real time.

Tools for desktop sharing

Desktop sharing among the participants in training through specialized software is one approach to learning in real-time. Business companies very successfully implement a continuous training of staff through the means of communication in real time. Application of tools for desktop sharing in the traditional education poses many questions about how this approach can be fitted in the traditional classroom by working in a network environment. Such tools make it possible to implement a specific model of E-learning. This model supposes a non-traditional form of participation in the training and higher level of learners' activity.

Desktop sharing is the technologically-empowered ability to transmit the contents of local computer screen to one or more remotely connected Internet users. This means that network users can see in real time on their computer screens all applications, documents, presentations and images running on the computer of the one of the participants in the meeting. Desktop sharing is not confined only in monitoring the contents of a remote computer screen but also it involves interaction and control. They are particularly needed in a modern learning process.

Our efforts were directed towards the study of software for online meetings – Mikogo and its implementation in training on course Information Technologies.

Our choice – Mikogo

Mikogo is free software for desktop sharing, developed in Germany by BeamYourScreen. Its application is mainly in the organization of online meetings, remote maintenance of systems and software, Web-presentations and other business communications.

Key features of the training organized by Mikogo:

Screen sharing among the participants in the meeting. The teacher shares his desktop with other participants. Students can see on their screens the teacher's actions that he performs on his computer. He can show them any materials – text documents, presentations, audio, and video. This is a very appropriate tool for demonstration of various skills to work with different information technologies. The teacher can choose which of the active applications are visible to students and which remain hidden from them during the process of demonstration.

Switch presenter. The teacher can provide the right to take the role of presenter to each of the participants in the meeting. That inspires the students' attention because each of them may be pointed to repeat or demonstrate an initial action and other participants to observe his working screen. The presenter has a small window on his screen (Back Monitor), where he can see what other participants in the session see at any time. This is a very necessary means of self-control and feedback.

Remote control. When the presenter is one of the students participating in the session, the teacher may request a remote control over his mouse and keyboard. It is available also an opposite approach – the teacher can give control over his input devices to the student.

Transfer files between participants in the meeting. Mikogo supports files transfer between

presenter and participants. The teacher can simultaneously send file assignments or lectures to all or only to certain students in the group. Supervision of the reception and storage of sent files is in the hands of students. There is a possibility for participants to send files to the presenter. This is very convenient for getting feedback. There is a limit to exchange files between the students themselves, which excludes the irregular exchange of information between them.

Whiteboard. The whiteboard is an aid to assist the teacher. It can be used to highlight certain important points of the presentation or lesson.

Participant pointer. Participants can indicate on their local computer by mouse clicking individual objects from the window of the working session. This affects on the current presenter's screen. A large coloured arrow and the name of the participant appear on the presenter's screen. This aids discussion and demonstrations, as participants can quickly draw the attention of the presenter and other participants, or aids organizing teamwork.

Besides all of the above, which specifically concerns the conduct of the training process, Mikogo provides a means of session recording and playback session held. There are opportunities for planning future sessions, which includes fixing the subject of methodical unit, time of holding and possible its duration. Using Mikogo the teacher can inform students about upcoming sessions via email messages. Several levels of security are available to protect the user's privacy and computer data. All transmitted information during a meeting is compressed with proprietary compression algorithms. Mikogo requires minimum system requirements for computer systems. Users do not need some special technical skills and knowledge to use the product.

There is another very important advantage of Mikogo for us, namely the possibility of integration with other products. Mikogo is set as Add-Ons for Mozilla Firefox. Starting an online session directly from the browser is fast and easy process. Mikogo can be used together with Skype through a special supplement to it. It is well represented at Twitter and Facebook. There is a possibility for integration with LMS Moodle. Mikogo has been successfully used in our courses in Informatics, Linear optimization, Communication and information technologies and Internet technologies.

As a result of our experience in the use of Mikogo we can conclude that such kind of software, which is not created in order to organize E-learning, can be successfully applied in education. A specific model of interaction between participants in the learning process can be realized through it. Students can monitor the desktop, running applications and actions of the teacher in real time. The teacher has full control over online session and its participants – he can monitor students' screens and control their actions. Mikogo provides opportunities for organizing and moderating a school unit in real time.

According to us, Mikogo has the potential to ensure the active participation of students in the absorption of new knowledge and skills, to enhance their experience in team work and cooperation. These tools can find a place both in educational units for new knowledge, and in monitoring and assessing of trainees. Such tools are very useful in special cases of consultations of students in a difficult health condition. They will receive an opportunity for remote monitoring of teaching.

Integration of various ICT tools

As a result of our continuing work in the area of E-learning we apply various ICT tools in our practical activities to meet the needs of different aspects of training. Due to the fact that almost all of ICT tools are from the group of free software, is possible to use them together and integrate into a one system. LMS Moodle can be regarded as a core of the system. Since the system is an open source, there are capabilities to enrich with new modules for additional activities. This is a prerequisite for expansion and diversification of activities and techniques used by teachers in the training.

We can summarize that to the LMS Moodle and its basic activities, we have added some new, namely:

- desktop sharing (Mikogo);
- web-conferencing tools (Skype, Voodoo, etc.).

We believe that the integration of various ICT tools to one system is effective for teachers and for learners. On the one hand the learners work in a familiar user-friendly environment; they do not need any special skills or prior training to work with software. On the other hand the benefits for teachers derive from the fact that it is not necessary to install and adjust a variety of products to carry out different educational purposes. They choose from available tools and diversify the teaching process.

Conclusion

E-learning is an integral part of training. It can be realized in various forms using different technologies. E-learning is a limitless source for: the expansion of interactive activities used by teachers; innovating teaching and learning; stimulating students' activity and improving the communication between teachers and learners. E-learning can be used as a complement to the traditional training. All these aspects lead to increased efficiency of training.

There are many different technologies and tools for implementing e-learning. We consider them as aids to ensure the learning process, which can increase its effectiveness. Our efforts as teachers are directed to the selection of appropriate means consistent with the features of the studied subjects and the specificity of the trained students. The presented examples of application of ICT in the learning process work well in CSU.

The usage of free software stimulates the interest to information technologies and motivates teachers and students to improve. The integration of various ICT tools into one system is a very effective approach that covers all phases of the learning process.

RESOURCES REQUIRED AND USED

The financial and human resources are important issues for successful implementation of Information and communication technologies at the university. The necessary financial resources are needed for:

- equipment and software purchase, its installation and setup;
- learning materials purchase (multimedia encyclopaedia, e-books, etc.);
- licensed trainings for teachers and staff of IT centre;
- support materials and spare parts (cables, cartridges, lamps for multimedia projectors, etc.) purchase;

- Respective competitive salary and compensation for IT and teaching staff;
- The required high qualified human recourse can be involved from IT industry or be trained during education of Staff by certified IT partners and Companies. Private Public Partnership are very welcome.

FACILITATING FACTORS

The following factors are facilitating of successful implementation of ITC in CSU:

- partially existent network and computer infrastructure;
- some of necessary equipment (computer classrooms, multimedia projectors, printers, copy machines) were purchased via participation in the international infrastructure projects, as grants and as technical assistance from Embassies and private companies;
- the teaching and technical staff of IT centre participated in the trainings in framework of respective TEMPUS Projects and special education programs (free of charge) organized by partners and IT companies;
- full support from the University authority during development and implementation of strategy of implementation ICT technologies in the university.

CHALLENGES AND OBSTACLES

The difficulties in CSU, which are necessary to overcome in order to introduce the good practice:

- insufficient financial sources for covering cost of staff trainings, support of network and computer infrastructure, and purchase the software and hardware and other equipment;
- insufficient financial sources in order to pay competitive salary for specialists from IT industry;
- very high demand in high quality IT specialists in economy, industry and high educational institutions, and lack interest from them in collaboration with university;
- the lack of sustainable strategy of development and implementation of modern IT technologies at CSU.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

The more important and innovative aspects of implementation of ICT technologies at CSU are:

- development of strategy of implementation of IT technologies in the education process in the University;
- regular trainings for teaching staff of the Department of IT, Mathematics and Physics and technical staff of the Centre of Information Technologies;
- the collaboration between CSU and private IT companies (Mikrotik and AITEC) allowed to university increase knowledge's and skills of teaching and technical staff in IT and network technologies, as well to equipped to network laboratory with modern network equipment;
- the participation of CSU in the international projects and grants, as well as collaboration with Embassies, international organization and NGO is are key issues.

SUSTAINABILITY OF THE GOOD PRACTICE

The sustainability of the good practice implemented at CSU is guaranteed by following:

- development of sustainable strategy of implementation IT at the CSU;
- regular renovation of IT equipment and software;
- regular trainings for IT and teaching staff;
- participation of CSU's staff in the international projects and conferences focused on IT;
- strong collaboration of CSU with IT industry, Government, NGO and society.

TRANSFERABILITY OF THE GOOD PRACTICE

The key points for effective practice for other higher education institutions willing to transfer the innovation:

- the development of strategy and work plan for implementation of IT technologies at the University;
- preparation of high quality staff of IT department and their participation in the respective trainings, projects and conferences;
- strong administrative and financial support from the university's authority for implementation of IT technologies at the University;
- strong collaboration of university with other higher education institutions, IT industry, Government, NGO's and society, and its participation in the international projects focused on IT.

LESSONS LEARNT AND RECOMMENDATIONS

Institutional level

School and higher institution heads should support the above policies and actions by adapting, when and where applicable, how professional development is organised at school level, replacing when appropriate external traditional training programmes by peer learning and sharing activities organised at school. They should support online teacher learning communities at school and/or school network levels. They should also allocate time for teachers to cooperate and reflect about new practices inspired by IT based teaching and learning scenarios and activities, and to test, discuss -and adapt when possible - digital learning resources with a view to introduce them into mainstream teaching.

Central and local level

Increasing students' IT-based activities during lessons, and as a consequence their digital competence, strongly needs to be boosted. Policies and actions to support a quantitative and qualitative increase in teacher professional development are probably the most efficient ways to obtain results in this area, especially given the interest shown by a large majority of teachers learning IT in their own spare time. This support could usefully look at capacity building specifically in the area of new patterns of teacher professional development through online learning communities and other schemes closely integrated into teachers' daily practice (informal methods, blended learning, 'on the job' training, teacher and school networking on a local/regional basis, etc.), all training models not much used at present.

These more recent professional development approaches could also more easily integrate teaching and learning scenarios and activities concretely showing teachers how IT can be fully integrated to support efficient learning for all students. Policy makers should also dedicate attention to the creation and dissemination of good quality digital learning resources with the aim of increasing their use by teachers and students during lessons. Here

again depending the division of responsibilities in each system, these action lines should be supported at central/national, regional and/or local level in a coherent way. In countries where an inspectorate exists, policy makers have to make sure that the efforts along the lines presented above are relayed and assessed by inspectors.

Enable pedagogical innovation with digital competence

- Turn digital competence into a key priority in teacher training. Teacher training is central and can also be the core bottleneck to embedding of learning digital competence in education. Teacher training in all fields should include advanced digital competence, not concentrating only on IT user skills of teachers. All the teachers should be involved from the earliest education levels and in-service training courses for advanced digital competence and eLearning didactics should be introduced. The training should consider aspects of using ICT both as a learning tool within subject teaching and a tool used by learners for their coursework outside school settings.

- Learn 'critical' and 'quality' use of digital tools within context. Learning digital competence should include the development of a critical attitude to the digital media when using it. Teachers and trainers of all fields and disciplines should be confident and competent in these skills in order to encourage students to use ICT for their learning in a critical and creative way within different subjects, when searching for relevant information, evaluating the reliable online information, critical attitude in publishing online content. Teacher training should engage teachers getting in touch with practice and hands-on experiences and resources that closely relate to their daily needs.

- Encourage innovative learning approaches. Innovative teaching and learning approaches with IT can be developed independent of the subject, in order to put learners at the centre and engage them actively in the learning process, promoting discovery and experiential learning, problem solving skills, etc. At the same time these aspects bring forward skills relating to digital competence, such as online collaboration with confident and critical use of the digital tools. Initial and in-service teacher training should disseminate insights and encourage teachers to experiment with new tools as well as to participate in teacher networks and follow innovative developments in their field.

Support digital competence in organisational strategies

- Embed digital competence in all curricula and institutional strategies. Digital competence should be included in educational curricula across all levels and disciplines, building digital skills already from primary education through learning to use digital tools confidently, critically and creatively. The importance of advanced digital competence needs to be emphasized for all stakeholders (such as teachers, headmasters and managers of schools, learners as well as for parents, trainers; human resource managers, NGO's etc.). A strategic approach for personnel training and skills updating should be established, engaging teachers in continuous regular in-service training through 'real' incentives. Institutions should embed digital tools in the institutional environment, and provide simple, easy to use platforms and support services for both teachers and students. Next to the IT user skills, emphasis should also be given to embed more advanced e-skills in curricula for IT practitioners and professionals.

- Enable networking between and within institutions. Learning networks between educational and training institutions can support the emergence and sharing of new practices and encourage teachers to try new approaches with digital tools. Furthermore, nurturing bottom-up developments and networking within institution stimulates engagement and involvement. Institutions should support free courseware development and sharing by the teachers, allowing and encouraging blended learning resources. Setting up collaborative peer learning networks with coaches and buddies can support teachers and through them the organizational development towards new learning and teaching approaches.

- Develop targeted and flexible strategies for different contexts. Digital competence needs to be a priority in lifelong learning strategies, as IT is an increasingly important tool for leisure, learning and work in all fields and a key condition for social inclusion in the information society. However, the approaches need to take into account different contexts. For example, digitally illiterate youngsters or the slow learners are difficult to integrate and need specific measures. Successful and sustainable practices for older workers show the importance of intermediaries and the informal learning aspect of the initiative.

Acknowledge and benefit from technological innovations

- Revisit regularly digital competence strategies. Technologies and their usages evolve, and new skills and competences arise with them. Digital competence approaches should therefore be dynamic and regularly revisited. Currently, the concept of digital competence is re-shaped by the emergence and use of new social computing tools, which give rise to new skills related to collaboration, sharing, openness, reflection, identity formation and also to challenges such as quality of information, trust, liability, privacy and security.

- Recognize and support informal learning of digital skills. Social computing tools are developing fast and continuously creating new online communities for learning, socializing and sharing practices. These form important places for learning IT skills as well, as they both motivate people to learn IT in order to participate and provide peer support for learning relevant digital skills for participation. Supporting openly available educational resources on digital competence can further promote awareness and digital skills for these learners and communities. Approaches need to be developed to recognize digital skills acquired in informal ways.

- Support research on the impact of IT for learning. More research is needed for finding evidence on how technology can enhance learning and which challenges it may raise for the skills of teachers and learners. Teachers should be encouraged to document and share the practices they have developed, as well as challenges and impacts they have encountered. Incentives for the objective assessment of enabling and disabling factors for using digital tools for learning should be implemented. This would provide institutions and teachers with proven practical models, helping teachers to learn in particular how to use innovatively but critically IT for different kinds of subjects and the added-value of IT as a teaching tool

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17. Activization of Applying Computer Technologies in Higher Education

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EXECUTIVE SUMMARY

The basic provisions of the Concept for Informatization of the System of Education of the Republic of Belarus to 2020, the necessity of activization of applying information technologies in higher education, basic goals and objectives of informatization are given and described in the case study. Also the experience of introducing information and computer technologies at the P. O. Sukhoi State Technical University of Gomel (GSTU) in Belarus is described. The data on the present state of the information and communication medium are given, the main approaches to the formation of the information and education medium and methodological materials are described. The main approaches to the training of instructors in the use of IT technologies in educational process are described. The structure of the electronic training course and the requirements for its separate parts are given.

BACKGROUND INFORMATION

GSTU was established in 1968. Today the University is the largest technical higher educational establishment graduating engineers of mechanical engineering, technological and power engineering profiles and also specialists for the field of economics and management. Over the years, tens of thousands of specialists were trained for many sectors of national economy and up-to-date material basis was created for educational process and research. At present the University is one of the largest higher educational establishments in the Republic of Belarus and it provides multi-profile training and retraining of engineering personnel and specialists of high qualification. Over 10,000 people work and study at the University. There are seven faculties, including Mechanical Engineering Faculty, Power Engineering Faculty, Technological Faculty, Economics and Humanities Faculty, Automation and Information Systems Faculty, Correspondence Faculty, Pre-University Faculty, and the Upgrading and Retraining Institute.

Across 30 Departments of the University, about 400 highly qualified instructors work, including over 150 educational specialists with higher degrees and titles. The University provides instruction in 19 specialties, specializations and areas of specializations at the First Level of higher education, 6 specialties of the Second Level of higher education (Master's Degree), 11 specialties of retraining based on higher education and in 9 specialties of Postgraduate Department providing post-graduate students with training for a PhD Degree.

As the basic data for preparation of the case study, the reported data on the information-communication infrastructure of the University, financial sources of its development and support, the data of the development of the electronic educational-methodic packages and internal normative documents on the development of electronic training courses, were used. The basic provisions of the Concept of Informatization of the System of Education of the Republic of Belarus to 2020 are given in the case study. Based on this concept, the policy

of introducing information technologies into educational process is conducted at GSTU

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Increasing use of ICT in education

THE WIDER CONTEXT

Information processes based on Information Communications Technologies (further ICT) constitute the basis for the present-day information-oriented society. Applying ICT in various spheres of human activity contributed to origination and development of global process of informatization. In its turn, this process gave a stimulus to developing education informatization, which is a fundamental and the most important goal in 21st century due to the following major reasons:

- rapid development of informatization of the society as a whole, which involves radical social changes and substantially changes practically all aspects of society life;
- urgency of the educational problem of people's adaptation to life in the conditions of new information medium of human civilization i.e. infosphere;
- availability of information transfer methods for mass users, and their wide spreading in various spheres of life activity, due to steady reduction of the cost of this means;
- rapid growth of functionality and improvement of technical characteristics of ICT which pass ahead of the readiness of users.

In the conditions of information-oriented society, informatization is one of the most important conditions of its reformation and modernisation. This is conditioned by the fact that it is the sphere of education where those people are trained and educated who not only form an information medium but also plan to live and work in this new medium. The experience of the development of economically advanced states shows that informatization of the system of higher education is one of the key conditions defining the following accelerated development of economy, science and culture. A qualified professional being the bearer of knowledge becomes the main source of innovations, determining in the final analysis global competitive ability of the social-economic system. That is why informatization of higher school is one of the most important components of social-economic development of the Republic of Belarus.

Taking into consideration the above reasons the concept of informatization of the system of education was developed in the Republic of Belarus for the period to 2020 which defines major goals and objectives. The major goals of informatization of the system of education in the Republic of Belarus at the present stage are:

- providing the population with equal opportunities of getting educational services in conformity with present-day requirements of the state, European and international standards irrespective of the place of residence and study;
- forming a personality adapted to life in an information-oriented society with all its opportunities, dangers and risks.

These goals are to be achieved by means of improving the quality of educational services by means of:

- providing availability of high quality educational resources and services;
- efficient involvement into educational process for all the various means of

informatization at the educational institution and at home;

- developing students' motivation for obtaining knowledge and continuous self-education.

Present-day society has become an information-oriented one during the last decade, and is rapidly becoming mobile. This means that access to the information and services is provided for users continuously irrespective of location and time. For providing such mobility, new classes of computer devices appeared (smartphones, computer tablets and so on) and also new technologies for work, with information resources and services (cloud technologies).

The present-day actual slogan for the system of education of the Republic of Belarus is becoming the following - "Present-day student is a mobile student". Such a student either a schoolboy, lycée student or institute or university student should have anytime access to educational resources and services – at the educational institution, at home and on the move. This is also referred to other participants of educational process: parents, instructors and managers of the system of education of various levels. Mobility of every participant of the educational process will underlie mobile education in the new information-oriented society. Significant changes in the organization of mobile education must be applied first of all to educational standards, syllabi and curricula, textbooks and teaching aids in hard copy version and soft copy version, educational resources, methodical support and then hardware. The latter are the tools for providing mobile access to educational resources and services which are of primary priority in creating and later developing the system of mobile education.

One of the steady world informatization trends is migration towards so-called cloud technologies. These technologies are based on centralized storing and processing data at data processing centers (DPC), on flexible mechanisms of resource management and allocating them to remote users. Major advantages of cloud technologies are efficient use of hardware and information resources, scalability of decisions, reduction of the costs of development and operation of information systems, providing high level of such systems security.

Applying cloud technologies in the system of education will enable mobility and relevance of educational resources. The cloud educational medium will provide educational institutions with the possibility to use, with no additional costs, up-to-date and continuously updated computer infrastructure, software and services made available by DPC. Accordingly the expenditures of educational institutions for building and supporting local infrastructures will be reduced. Cloud technologies will enable personal computer units of instructors, students and higher education institutionsr parents to be involved in the educational process.

Migration to cloud technologies changes priorities in informatization

Computer devices become secondary ones. Any of them should provide access to educational resources and services regardless of the type, brand and producer, or higher education institutionsr location. Educational resources and services become primary issue and they require major effort for higher education institutionsr development. This approach will enable the creation of a suitable environment for access to resources from various devices including mobile ones and provide timing of user activity on various devices

(computer in classrooms, home computer, personal computer tablet or smartphone).

Technical infrastructure of informatization of the system of education

Supplying educational institutions with computer equipment should be continued. It is necessary first of all to ensure timely replacement of computer class equipment becoming obsolescent and outdated. Computer equipment should become the efficient tool of educational process in various subjects. It is practical to purchase mobile equipment including notebook computers and computer tablets for educational institutions. A primary task is mass provision of educational institutions with up-to-date video projector equipment based on the principle – “multimedia video projector in every classroom, every lecture room”. Principle issue for the development of cloud technologies in the system of education is providing high-speed internet access for all RB educational institutions. The national segment of the internet should be used as transport medium for the access to Belarus educational cloud.

To involve maximum numbers of personal and multi-access mobile devices, it is practical to develop wireless networks at the educational institutions. Such networks should provide access to information resources of the educational institution, cloud of the national system of education and also controlled restricted internet access from the major part of lecture rooms. Integrated use of various computer devices is possible with the availability of an easy to use and secure system of users’ authentication and identification of higher education institutions activity in computer networks. Such systems can be built by the use of electronic smart-documents based on contactless RFID devices as it is done in HIGHER EDUCATION INSTITUTIONSs of the country and equipping computers with reading elements.

Introducing informatization means in educational activity

Such introducing assumes availability of relevant methodic, organizational and personnel support. During working out documents regulating informatization of the system of education (strategies, programs and other) these issues are given due regard including also financial issues. Introduction of informatization means should not become the end in itself. The task should be assigned to develop the methods of efficient and appropriate use of ICT in educational process resulting in obtaining meaningful educational results. Under appropriate use of ICT it is assumed that:

- time and inputs of educational process participants for solving this or that problem (e.g. during preparing the instructor for the lesson or test papers checking-up) are considerably reduced;
- visualization, emotional richness of educational activity, motivation of students (e.g. during demonstration of high quality instructional material with video projector) is improved;
- complicated educational problems can be solved which are impossible or difficult to solve without ICT (e.g. detailed diagnostics of knowledge gaps of the students , demonstration of sophisticated virtual models, trials, experiments).

Introducing informatization means in educational process actually creates a new type of educational process – mobile education. Within the framework of such education it is necessary to afford the students the following opportunities:

- getting fundamental knowledge necessary for solving specific cognitive or practical problems;

- having access to extra information sources necessary for the solution of the problems posed;
- discussing arising problems, issues and prospects with other participants of educational process;
- carrying out efficient unassisted work, in a timely manner and consciously correcting higher education institutions' educational and cognitive activity.

For implementing mobile education the following conditions are necessary:

- flexible educational programs built according to specific character of the task performed, disposition and abilities of a certain student;
- including into the list of allowed organizational forms of distance (online) group and individual classes and tutorials and also other events in the given format;
- in some cases, normative assignment of complete or partial replacement of printed educational documents by their electronic analogues (electronic class register, electronic home assignment and other).

Developing the kinds and forms of mobile education should be accompanied by creating landmark system of organization of the net scientific and methodical service providing personal and professional and also information-methodic support for the instructors. Personal computer is by definition a device for individual unassisted work. Therefore its continuous use during classes at the educational institution is not advisable and even harmful. Unassisted work of the students is implemented during classes and can be completed with efficient use of computer devices. However the major reserve for introducing ICT in educational process is involving students' home personal computers in performing practical learning tasks. At the same time such PC use should be appropriate and efficient.

Application of ICT must contribute to creating a new atmosphere in educational institutions, the most important element of which will be the cult of knowledge. Such an atmosphere can be the result of the integrated system of actions familiar to and understood by children and higher education institutions' parents. Motivation should be closely linked to early professional orientation of school children. There is a demand for engineers and specialists for high technology sectors of economy in the country and higher education institutions' training should begin as far back as in school. In this case, a very important role can be played right by ICT introduced in the activity of the system of education.

Development of human resources potential for education informatization. Pedagogic specialists should have necessary qualifications in the sphere of ICT use in the educational process. Providing computer competence of pedagogic specialists at an up-to-date level as well as ability to select and use the methods and means of achieving educational goals in the mobile information medium should become the task of continuous advanced education of pedagogic specialists implemented in various forms. An important role in mass transfer of pedagogic specialists to operating in the mobile information medium is assigned to the system of advanced pedagogic education. Periodic upgrading (once a period of 5 years), studying during the so-called "inter-course period" (including seminars, trainings, exhibitions, competitions and other), self-education of pedagogic specialists should be provided based on the principles built in this strategy. An important role in this case should

be played by distance upgrading and network interaction of pedagogic specialists.

Informatization of the system of education management

A major principle of informatization of the system of education management should become aimed at making information services available to all the participants of educational process, first of all to students and their parents. Automation of management, which is intended for simplifying administrative chores at the educational institution, should be completed with needed information services (electronic diary, electronic record at the educational institution and other).

One of the important lines of informatization of the system of education management is developing and introducing the country's information-analytical systems. Their major task is providing governing bodies of different levels with timely, reliable and complete information assisting in making managerial decisions. However the development of this line is impossible without solving the problem of electronic digital signature. At present all electronic data collected in the system of education actually are not legally valid and managerial decisions are made after processing and analyzing printed documents with statistical data having official seals and signatures.

Step by step transfer from local automation management systems to cloud systems will enable to reduce the costs of their operation, and also provide access for all interested to the information maintained in continuously updated state.

RATIONALE AND INTENDED RESULTS

The problem of informatization of all the aspects of society activity in the Republic of Belarus has been paid great attention to recently. According to the Program of the Government activity of the Republic of Belarus for the years 2011 – 2015 the goal is defined of the formation of information oriented society in the country, based on introducing information-communication technologies and also being ranked in 2015 among the countries with the highest index of information-communication technologies development as per the system of evaluation of International Telecommunication Union and UNO.

The strategic goal of education informatization is building the unified educational space within not only a particular educational institution but also on the national scale. Informatization should cover all the levels and structures of the system of education. The initial link and starting point of building such a system is informatization of educational process and management system at the level of a particular university.

Thus it is advisable to provide the analysis of the processes of informatization and their dynamics at the level of a particular university and specifically of the GSTU. Intended results are:

- analysis of the condition of information-communication infrastructure of the University from the position of the Concept of Informatization of the System of Education for the period to 2020, its major goals and objectives;
- generalization of the University experience on the formation and introduction of informational educational technologies into educational process.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

Strategic plan of University development for the years 2011-2015 includes the solution of a number of problems, among which the problems directly connected with the activation of the applying of computer technologies in the system of education are singled out:

- developing and improving innovation educational technologies used in educational process;
- enhancing the significance of information technologies and improving educational-methodic base;
- enhancing the significance of unassisted work of the students by means of providing the conditions for independent access to educational resources and technologies of self-education.

Performing these tasks is based on regular development of electronic educational-methodic packages of subjects (EEMPS) and curricula for specialities taught at the University. For methodic support to developing EEMPS, the instructors at the University developed the Regulations about EEMPS stating major principles of forming the components of EEMPS, its structure, presentation requirements, and the procedure of registration, reviewing and publishing. Material stimulation of the developers of EEMPS is also stipulated in the Regulations depending on the level of its development and the volume of educational material. The dynamics of providing the subjects with electronic educational-methodic packages is the following:

Year	Number of EEMPS	Provision, %
2010	32	5
2011	94	15
2012	210	35
2013	325	54

EEMPS are put on the education portal of the University and available for use by all registered users. In 2014, the work on transformation of EEMPS into electronic courses (EC) will be started. The EC is a package of text, graphic, digital, voice, musical, video, photo, and other information put on the educational portal of the University and adapted for use in educational process. EC should have a module structure and include the following required structural components:

General materials on the educational program include:

- syllabus for the subject;
- introductory part: goals and objectives of the subject, information about a lecturer and assistant lecturers;
- a guide to studying a subject: period of studying the subject, the type of assessment event (examination/test); the conditions for the admission to the examination and criteria of its assessment; test/laboratory work/ summary presentation requirements;
- the conditions of conducting an examination and criteria for assessment mark forming.

Educational-methodic materials:

- theoretical material divided into modules and topics inside modules;
- practical material divided into modules and topics inside modules.

Materials for self-training and self-testing of knowledge (modules):

- list of literature recommended;
- questions and assignments for self-testing;
- test.

Materials for final knowledge testing:

- questions for final check-up for the test (examination);
- final test.

Theoretical material of EC consists of logically complete educational modules and includes the material for theoretical studying the subject in the volume stipulated by the curriculum for the specialty.

The material for theoretical studying of the subject can be created by any possible means based on Content Management System (further CMS) and also by any other means and can be presented in the form of lecture summaries, electronic textbooks, electronic learning aid or other electronic document illustrated with various multimedia or other type insertions demonstrating and explaining the material worded. Practical material of EC is arranged by types and within the volume of educational work stipulated by the syllabus for the subject studied.

Material can include the following components: Laboratory Practical Work, Practical Classes, assignments and methods of performing tests, routine calculation, computation works, course projects (papers). Each component should include the examples of practical solution of some problems designated for acquiring various skills and abilities, repetition and learning the material studied.

Laboratory Practical Work component should include methodic material for laboratory works, guide for higher education institutions performing, illustrated with multimedia or other information and explaining major steps of preparation for higher education institutions performing, direct practical performing and the analysis of the results obtained. The element can include virtual laboratory works, stands, electronic trainers.

Practical Classes component includes methodic materials for practical and seminar classes regulating practicing of skills and abilities, repetition and learning the material studied by demonstrating examples of practical solution of the problems, problems for unassisted solving or electronic trainers, business games, and also the materials for performing calculation-graphic works, including variants of assignments and methodic guides for higher education institutions performing.

Course Projecting component (course projects, papers) should include assignments and methodic guides for implementing a course project (paper), its structure, composition and presentation requirements. Test Papers component should include variants of assignments and methodic guides for performing and presenting them in the form of link to the

University electronic library.

In addition to this, EC can include the components including reference and auxiliary materials for example: a glossary, a list of abbreviations, highly repetitive questions with answers, electronic copies of originals, questionnaires, examples of problem solution and analysis of typical situations, reading books, collections of students' works and other components created by one of available means of CMS (electronic seminars (forum, chat or consultations).

Tests should be relevant to all key problems of the subject studied and direct students to unassisted studying, scientific and educational literature becoming the analogue of test papers, calculation-graphical works and other forms of knowledge testing. Recommended literature should be presented in the form of hyperlinks to the University electronic library or in the text form according to the rules of bibliographic data record. Freely distributed Moodle Content Management System is employed at the University as the platform providing forming and management of EC and also access to them.

The instructors of the University undergo upgrading in the form of studying at short term courses or during in-depth training courses at the enterprises and other higher educational institutions, a minimum of once in a period of 5 years. When the instructors are sent to upgrading short-term courses, the availability of the topics of employing information technologies in educational process in higher education institutions programs are taken into consideration.

In addition to this the work on organization of upgrading the staff of CIT is provided in the spheres of telecommunication, data processing and supercomputer calculations, organization of in-depth training of the University staff at leading IT companies of Belarus and the region.

A unified informatization medium is created at the University – the University Automatic Control System providing information support for managerial activity and educational process including over 40 workstations located at over 323 workplaces and including the majority of the main departments of the University. The development and transformation of the Automatic Control System into the University integrated automatic control system “Electronic University” is planned including the following processes:

- management of educational (learning) process including monitoring and diagnostics of educational process quality;
- research management;
- management of economy, finances and account policy;
- management of educational and educative work with students (activity beyond instructing);
- international activity management;
- marketing of educational services;
- Quality Management System control;
- management of material and technical resources;
- labour protection management;
- management of infrastructure development and operation;

- documents circulation management;
- management of social support of students and instructors.

RESOURCES REQUIRED AND USED

The computer park at the present time (as of 1st May 2013) at the University includes 920 personal computers. 265 computers of which are located in 15 computer class rooms and used in the educational process, 345 computers are used in the administrative – managerial sphere of University activity. There are 36 computers for work with the library stock operating in electronic reading halls. The other PCs are used by the departments and other structural units. Updating of the computer park is provided routinely.

In 2012 computers for two computer class rooms were purchased. For the year 2013 purchasing of the equipment for two computer class rooms is planned. The average period of computer operation is 6 years. The computer park of the University is updated by 8% annually. 665 computers at the University are linked into a computer corporate local network connecting computers of all buildings for studies.

Connecting to the internet global network is centralized, based on internal legal regulating documents. Internet connection is provided by fiber-optic communication link. Channel bandwidth is 10/3 Mbit/sec. A new version of the official University website is implemented with the internet address www.gstu.by. The university has e-mail service and its operation is supported by the University's own mail server.

Information technologies provide automation of library processes such as search and work with electronic catalog and full-text documents (Automated Library Information System - ALIS). Access to the electronic catalog ALIS is provided through local network as well as through the internet. The library has three computer reading halls with 40 computers, with access to the internet and also access to the internet through the students' own personal computers or tablet computers via Wi-Fi channel.

The University informational educational resources are created and are being created at different hierarchical levels: educational portal, servers, electronic libraries, thematic websites, compact-disks and other media. Operation of the informational-educational system of the University is provided by the Center of Information Technologies (further CIT) in cooperation with other structural departments of the University.

Since 2011 a Unified System of Authorization of users (students and the staff) has been functioning at the University which provides for registration of the user and getting identified access to informational resources of the University:

- educational portal of the University edu.gstu.by; e-mail (200 MB per person);
- Internet-traffic (minimum 100 MB for a student and minimum 200 MB for a staff member).

18 multimedia projectors are applied in educational process of the University, enabling projection of presentations and other video materials from PC monitors onto a large screen. The plan of modernisation of the educational-laboratory base of the University for the year 2014 includes equipping 16 lecture rooms having about 1,100 seats total with stationary

multimedia units.

FACILITATING FACTORS

Basic factors which facilitated the work on introducing information technologies into educational process are the following:

- availability and efficient operation of the local computer network of the University starting from 1996;
- availability of the structural department at the University (Center of information Technologies) providing support and planned development of information – communication medium, its software and hardware parts;
- systematic training of the University instructors through the system of upgrading courses, the curricula of which include the subjects concerning educational technologies including also informational ones.

CHALLENGES AND OBSTACLES

At present many activities in the sphere of education informatization are implemented as processes but not as projects. These activities include equipping educational institutions with informatization means, training instructors in the sphere of ICT and applying ICT in the educational process. It is proposed to transfer to the project principle in all lines of informatization, starting from equipping computer classes at schools to developing and applying educational resources and services. This will ensure result orientation and enhance responsibility of executing personnel.

In the course of informatization of any sector, failures and errors can occur. It is more often that they are the result of the lack of integrated character of the solution of the problems posed. Costly equipment is purchased but personnel training is not provided. Software is developed which does not fit some types of computer devices. Mobile devices are supplied but wireless access to the internet is not provided. Therefore it is necessary to prefer integrated solutions providing coordinated efficient work of all the components of information–educational medium.

At the particular University level two problems connected with the introducing information educational technologies may be defined:

- What are the ways of filling the informational-educational medium (IEM) and what it should be filled with?
- How to organize the correct use of IEM in educational process?

As a rule, by the informational-educational medium the group of entities (instructors, students) and objects (contents of education, training equipment based on information technologies) of educational process providing efficient studying is understood. Two basic points of view on the introducing and the use of IEM in the higher education establishment may be figured out: the point of view of an instructor and the point of view of the organizer of the educational process.

From the point of view of the organizer of the educational process, the innovative educational technology of the use of IEM is the way of using the modern informational and technical means of creating, acquisition, transfer, storage, updating and processing of the

information, and also using the human resources for rendering educational services. As a result, the objective of the organizer of educational process adds up to set and control of the procedures planned, e.g. the introducing of the system of distant learning or electronic testing in all subjects.

From the point of view of the instructor, educational process is a complicated system that combines the work of an instructor and the efforts of students. While teaching it is very important to take into account the didactical, geological, psychological, sociological and other regularities of the educational process. It is the insufficient consideration of the educational factor that doesn't allow the necessary results while using the information and communication technologies.

The development of new training means and methods requires the instructor to be not only high-qualified, but also laboriously working person, and also it requires great time inputs.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

The project approach will enable to go over to personal responsibility for the efficiency of specific actions and processes in the sphere of education informatization. At this it is necessary to ensure the common responsibility of all the parties participating in projects including not only the developers of ICT but also the customers and users (educational system specialists).

It is impossible to develop information-oriented society if computer devices being in personal possession are not involved into the sphere of consuming information products and services. Under this category, desktop home computers available in household use in most homes in Belarus, personal notebooks and netbooks, mobile devices (tablets, smart phones, and readers) are meant. Involving all these devices which are the property of students and their parents, instructors and managers into educational process will enable to make the use of ICT continuous and systematic. Another beneficial effect of such an approach will be the reduction of government expenditures for equipping educational institutions with computer devices.

Private-governmental partnership in the sphere of the society and economy informatization proved its efficiency in many countries. A properly arranged partnership of the state and business enables a substantial reduction on budget expenditures and enhances the return on budgetary funds placement and investments. When arranging such a partnership, the primary issue should become a governmental order for solving some educational problem or performing some task. Then, based on such an order, a free competition of business initiatives should be held. Most promising, considered and profitable business-initiatives should then take the shape of specific projects in the sphere of education informatization.

The main thing which should ensure the partnership of the system of education and business is high quality and continuous support of informatization processes, necessary and timely modernisation and development of information-educational medium.

SUSTAINABILITY OF THE GOOD PRACTICE

Applying informational educational technologies in teaching of a number of subjects

included in the curricula of educational programs of the University enabled to improve the level of knowledge of students and successful passing by them term examinations.

Based on the analysis of the students proposals on improving the quality of educational process (putting electronic learning aids and materials on the University website with the possibility of access through the Internet, Internet access to the library resources of the University, wider use of testing and other) the improving the satisfaction of the students with the quality of educational services of the University is expected.

Methodic recommendations on the development of Electronic Educational-Methodic Packages of subjects, preparation of tests and organization of higher education institutionsr conducting are worked out for providing sustainability of introducing and applying information technologies in educational process. To provide training for the instructors of the University the personnel of CIT organized and held educational-methodic seminars on the use of information technologies in educational process: In 2011 “The Moodle system – basic concepts” during which the possibilities of the Moodle system, the procedure of forming educational courses and their management, resources of the Moodle system and their use were considered.

In 2012 “The operation with the educational portal of the University at which the portal interface, the procedure of registration at the educational portal, the issues of the educational course administration, developing the course and the use of its basic elements (lecture, test, polling, forum and other) were considered. The work on developing electronic educational-methodic packages of subjects and introduction of electronic training courses at the department level is planned annually which enables to control also the dynamics of wider application of information technologies and uniformity of their use in the implementation of educational programs of various specialties.

For the purpose of generalization and exchange of experience scientific and methodic conference “Problems of the Present-Day Education at Technical Higher Education Institutions” is held biannually at the University. Within the framework of the conference the section “Present-day information technologies and laboratory equipment in educational process” at which the problems of the applying up-to-date content management systems (CMS -systems) and training information technologies.

TRANSFERABILITY OF THE GOOD PRACTICE

To get the information on the use of computer information technologies in educational process at the University is possible by looking through in published materials of scientific-methodic conference “Problems of the Present-Day Education at Technical Higher Education Institutions” which were held in 2009 and 2011 and also by participating in the 3rd country’s scientific and methodic conference “Problems of the Present-Day Education at Technical Higher Education Institutions” which was held in the late autumn of 2013.

The problem field of the conference included five sections.

Section 1. Technologies of students’ knowledge control - the experience and the problems of the use:

- technologies of pedagogic tests designing;
- use of testing in general scientific and engineering sciences;
- quality and efficiency of the tests;

- diagnostics of the competence of the students and graduates at the stages of current and final assessment.

Section 2. Use of module educational technologies and organization of unassisted students' work:

- designing module technologies;
- implementation of a module structure of a training course;
- unit-module and module-rating educational technologies;
- controlled and supervised unassisted students' work;
- unassisted learning activity of students.

Section 3. Present-day information technology and laboratory equipment in educational process:

- applying up-to-date systems of content management systems (CMS systems);
- informational educational technologies;
- science intensive technologies in educational process;
- use of up-to-date laboratory units in specialists training.

Section 4. Present-day university and industry

- forming efficient models of interaction of educational institutions and industrial enterprises intended for improving the quality of specialists training;
- organization and work of joint educational-research industrial departments;
- assessment of the competence of the university graduates at the employers' enterprises.

Section 5. Management of quality of educational process

quality of educational services;

criteria for the assessment of lecture, laboratory and practical classes;

efficiency of the methods of training and its assessment;

system of quality management at the higher education institutions;

planning and monitoring target figures in Quality Management System of the higher education institutions

LESSONS LEARNT AND RECOMMENDATIONS

In the conditions of rapidly developing information technologies in the Republic of Belarus, the Concept of Informatization of the System of Education for the period to 2020 is adopted taking into account the world trends of the development of information technologies and systems which can and should be applied in the national system of education including higher education.

Implementation of the provisions of the Concept will be provided according to the plan of measures on its implementation and will enable to ensure the following:

- The population will be provided with equal opportunities of getting educational services in conformity with present-day requirements of the national and international standards, irrespective of the place of residence and based on this, forming a personality adapted to life in an information-oriented society with all its opportunities, dangers and risks will be ensured;
- By the year 2020 minimum 70% of the population of the Republic of Belarus will have

the opportunity of using electronic educational services (in 2012 – about 10%);

- All educational institutions and governing bodies of all the levels will be provided with high speed broadband access to the internet;
- Using cloud technologies, the unified informational-educational system of the Republic of Belarus will be created, the principle of mobile education will be implemented and the system of distance learning will become widely spread;
- The amount of educational published printed matter will be considerably reduced. Document circulation in the system of education will be reduced by 3 or more times.

Necessary infrastructure and educational process organized with the use of information technologies are available at Gomel State Technical University. With the purpose of developing and extending the practice of ICT application an internal concept of the University informatization is developed at the University approved on 10.06.2013 by the Rector and also necessary work on developing infrastructure and electronic educational material is planned strategically and also for the near future.

For efficient and wide application of information technologies in educational process the necessary requirements are

- availability of developed infrastructure (computer class rooms, computer reading halls connected into the local University numerical network with the access to the internet);
- program platform of the system of distance learning (LMS Moodle), educational content in the form of electronic training courses put on the program platform;
- methodic support and training instructors for the work with electronic courses and their management.

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18. Management of Lifelong Education System at University

Odessa National Economic University, Ukraine

EXECUTIVE SUMMARY

The case describes the process of creation of a life-long education system, realized within Odessa National Economic University (ONEU) on the basis of MBA programme of the Centre for Business Education.

The described system consists of the following elements:

- obtaining of the second education according to programme “Master of Business Administration”;
- providing of opportunity for professional development of managers of enterprises, organizations and representatives of business environment (both graduates of main MBA programme and non-students of the programme) through designing of Mini MBA programmes for various functional aspects of management;
- obtaining of access to permanent renovation of knowledge and skills of MBA graduates through participation in master classes, trainings and seminars held as a part of regular meetings of the Club of MBA graduates of ONEU;
- providing of opportunity for the graduates of economical specialties to obtain education according to MBA programme of ONEU within the period of 1 year (through transfer of programme basic discipline credits);
- realization of project of creation of business incubator, where beginning entrepreneurs and businessmen get consultations and take part in business training on free basis.

BACKGROUND INFORMATION

ONEU as a higher educational institution was founded on 1st June 1921. Today the University is a modern scientific and educational institution of economic specialisation that is known not only in Ukraine but also outside of its territory. The University is a part of world educational field, has high international rating that is confirmed by membership in European University Association (EUA). On November 11, 2011 according to the Decree of the President of Ukraine No. 1041/2011 the university was conferred a status of National university.

The university includes the following departments: Department of Economics and Management of Production, Accounting Economic Department, Finance Economic Department, Credit Economic Department, Department of International Economy, Commercial Department, Correspondence Department, Advanced Training Department, Special Retraining Department.

Scientific resources of the ONEU include 433 teachers, 53% of which have a scientific degree, 44 of them are doctors of science, professors. In the university 9 academicians of field academies, 4 honorary figures of Education, academic figures work that allows to carry out

fundamental and applied research studies in priority spheres of science and technology.

In ONEU it is established 24 chairs, 17 of them have a master's programmes. The university prepares professionals of 16 specialities according to 28 master's curriculum. It total 6 thousand students and post-gradual students study at the university, 300 of which are foreign students, trainees and post-graduates from 22 countries worldwide – Russia, Moldova, Belorussiaï, Azerbaijan, Vietnam, Mongolia, CNR, Israel, Romania, Cyprus, Turkmenistan, Congo, etc. Starting from 1921 the university prepared almost 95 thousand specialists on four continents, in fifty countries.

The university offers post graduate education in different forms, including advanced training of specialists at Advanced Training Department, retraining of personnel at the Special Retraining Department. The main objective of the postgraduate departments is both extension of educational services and improvement of content and technologies of education.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Accelerated obsolescence of knowledge get during studying at universities and increase need to construct a lifelong education system of high quality

THE WIDER CONTEXT

Changes that occurred in social development of central and Eastern Europe for the recent twenty years are reflected in all spheres of social, economic and political life. In the context of European integration changes in the society, economy, and the life standard require new social priorities in personal development. The information society presupposes development of economy, high technologies, exclusive standard of workmanship quality. Issues related to forming of new competences require special attention.

The modern society is based on knowledge and it means that information and motivation to its constant updating and skills necessary for it are becoming a key factor of development, compatibility of a specialist and efficiency of labour market. All of this raises new demands to the intellectual level of the society including educational system and lifelong education. Social, political, and economic processes occurring in the world, changes in demands of the labour market, time history of personal factors of professional activity, updating of educational standards and time reclaimed profession nomenclature raise new demands to the lifelong education system of related to preparation of a competitive specialist. Traditional basic formal education gotten at the beginning of life, is behind ever increasing flow of knowledge that is constantly updating.

Education and lifelong studying are considered as a key factor to achieve a general objective to construct competitive and dynamic economy based on knowledge. Lifelong studying serves as a necessary condition for improvement of a social position, forming of a civic stance, personal and professional realization and improvement of employment opportunities. Development of the market economy makes managers of companies and enterprises to pay more attention to additional vocational training of employees, to apply new innovation methods and practices. Frequently a decision on advanced training and

retraining of specialists is made not only to improve general qualification, but also so that employees are able to solve new problems arising in actual activity of enterprises that are sometimes specific enough.

Additional professional knowledge are necessary to specialists in view of constant changes of labour conditions connected with modernisation, improvement of production facilities, as well as vocational growth and change of employment, therefore continuation of education by adults is becoming relevant task of our times. Education serves as a guarantee of person's protection in continuously changing economic and political space.

Under terms of rapid changes occurring in the economy and at the labour market it is increasing a significance and necessity of education during the whole active life. On the one part, the necessity of lifelong education is dictated by a demand to fill gaps in knowledge and skills which are not received during studying by an objective of lifelong education, on the other part, an objective of lifelong education is becoming comprehensive development and self-development of the person influencing the whole society. Lifelong education is considered as a process of continuous studying a basis of which is those basic skills obtained by the person in youth. In the information society these skill should be reviewed and extended: they should be added by a skill to study and continue your education independently.

In addition demands laid to educational process are also enduring significant changes. The main task of lifelong education is improvement of education quality and competitiveness at the labour market. The lifelong educational system must justify these serious expectations. It is required a new culture of studying based on interactivity, individual solutions, revealing of advanced knowledge. It means that it should be changed work of high educational institutions. It is necessary close interaction of educations structures and institutions with enterprises and organizations by means of which it is ensured maximum application of know-how, skills, knowledge and innovative potential of both parties.

Efficiency of the lifelong educational system directly depends on its internal structure, use of a potential of educational institutions, financial resources, a number of students, etc. Taking into account the necessity to construct the efficient lifelong educational system complying with needs of students and needs in self-realization of an individual, ensures opportunities that will allow people to improve their qualification, to change a sphere of their professional realization, in ONEU it was established a post diploma education system. This system includes Retraining and Advanced Training Departments.

Activity of the departments is aimed at extension and updating of knowledge in spheres of economics, banking, information systems and financial management, extension and updating of knowledge in economic disciplines directly connected with the profile of ONEU, to get a new qualification and profession within short terms. At the present moment the postgraduate education system exists in unstable economic conditions not having an objective forecast of economic development and required legal framework.

Despite of this fact, for the period of 2008-2013 on the basis of the Advanced Training Department 5 thousand of students of different categories – government officers, managers and specialists of enterprises, organizations, institutions - completed courses of advanced

training and vocational retraining in the following spheres:

- training of stock market specialists;
- training of specialists in financial monitoring of professional participants of securities market;
- advanced training of accountant of professional participants of securities market;
- training of specialists in rendering of financial services;
- training of specialists in carrying out of public purchases;
- basic training and advanced training of appraisers;
- training of specialists in tourist sphere;
- training of specialists in the banking sphere;
- International programme of professional accountant certification CAP/CIPA;
- advanced training of State finance Inspection specialists;
- training of accounting specialists.

It is important to note that advanced training of stock market specialists and financial service market, in the sphere of public purchases, advanced training of Public Joint-Stock Company “State Savings Bank of Ukraine”, is legally regulated by repeated advanced training at least once per 2 or 3 years depending on a sphere. The Department constantly carries work aimed at ensuring of a high level of qualification and competency of specialists, executive officers in different spheres of our region, and in the academic activity engages not only professors and teachers of the university, but also highly qualified, experienced specialists-practitioners of the State Tax Administration, Regional Administration of Antimonopoly Committee of Ukraine, the State Financial Inspection, Odessa Regional State Administration, bank institutions, enterprises and organization, etc.

Flexible organization of the academic activity complies with the highest demands of students in view of selection of academic disciplines and coverage of topical sections of curricula. Curricula of advanced training by spheres are developed by teachers of the university and on the basis of recommendations and typical curricula of Ministry of Economics that regulates the financial service market and State Committee of Financial Monitoring, National Securities and Stock Market Committee, Ukrainian Institute of Stock Market development, State financial Inspection in Odessa region, Public Joint-Stock Company “State Savings Bank of Ukraine” with which it is executed Cooperation Agreement and it is carried out interaction aimed at improvement of vocational training of specialists in the economic sphere.

At the present moment Advanced Training Department is a link of lifelong education and intended to overcome personnel shortage in leading spheres of national economy. The Department includes:

- Regional training and methodological centers of advanced training and retraining of specialists;
- Courses for advanced training and retraining of specialists in financial and banking sphere;
- Center for Business Education;
- Courses of advanced training and vocational retraining of unemployed population.
- Basic activities of the Department include:
- ensuring of prompt personnel advanced training in relevant issues of economy, marketing, banking, information systems, and financial management;

- extension and updating of knowledge in spheres of economic disciplines connected with the university profile;
- getting of a new qualification and profession within short terms;
- educational and methodological activity according to the profile of department curricula.

Main tasks of the department are:

- to ensure getting of a new qualification, speciality on the basis of a previously obtained education and practical experience , extension of professional knowledge and skills;
- to ensure postgraduate education of citizens to adapt them to professional activity under conditions of rapid changes of social and economic relations, retraining of specialists by basic specialities of the university;
- to arrange course forms of education to improve mastership, to extend and update knowledge in special disciplines, to improve competence for different categories of population;
- consulting activity.

The Department realizes additional vocational educational programmes to improve professional knowledge of specialists, business characteristics, and readiness to perform new types of professional activity. Retraining Department as a part of the postgraduate education system of ONEU carries out prompt retraining of personnel in spheres of economics, entrepreneurship, management and business. The Department has highly qualified teaching staff, a state license required for retraining in all spheres of ONEU. Graduates of Retraining Department receive a specialist diploma awarding qualification of an economist in a relevant sphere.

The Department is accredited on the forth level of accreditation. Retraining is carried out according to modern curricula agreed by relevant ministries and institutions. The curricula are developed taking into account recent scientific achievements that investigate problems of economics, management, business, and entrepreneurship. At the Department teaching and methodological work is performed by leading chairs of the university and best teachers of these chairs.

The special Retraining Department conducts personnel retraining in:

- Company Economics
- Accounting and Auditing
- Marketing
- Finances
- Banking
- Corporate Management
- Personnel Management and Labour Economics.
- Duration of training makes:
 - in case of correspondent education form - 2 years;
 - in case of full-time education form -2,5 years.

The Department participates in “Ukrainian Initiative” Retraining Programme for Executive Officers in a sphere of entrepreneurship. Training according to “Ukrainian Initiative”

programme is executed at the account of state financing, and on the basis of a contract. Duration of the training according to this programme makes 10 months. Graduates of “Ukrainian Initiative” programme have a possibility to complete internship in Germany free of charge.

A division of the Retraining Department is Business Training Center of ONEU. Activity of the Center is connected with organization and carrying out of research and practice conferences, round-table discussions, and workshops related to issues of business development, as well as arrangement advisory and informative work with organizations, institutions and enterprises of the region. To ensure quality and proper level of specialists studying at the departments of postgraduate education allows availability of highly skilled teachers and professors that have knowledge in spheres of management, marketing.

In the academic activity of department divisions leading scientists, specialists and employees of enterprises (associations), organizations and institutions, representatives of administrative bodies of executive authorities participate along with permanent university teachers under conditions of permanent holding of more than one position with hourly payment in a procedure set by legislation of Ukraine. Thus, responding to the necessity of lifelong education system functioning dictated by modern conditions of society development ONEU established the postgraduate education system developing in two directions:
obtaining of the second education;
advanced training.

On the basis of analysis of demand for such services it is predicted preservation of a number of people requiring postgraduate education. Therefore the established system requires constant improvement and development.

RATIONALE AND INTENDED RESULTS

Departments of Retraining and Advanced Training, being a part of postgraduate education in ONEU, carry out continuous monitoring of the labour market and education services market to increase efficiency their work, development and offer to students of new programmes and courses. This analysis demonstrates a significant growth of demand for MBA diploma in the Ukrainian education service market. More and more employer indicate “availability of MBA diploma” criterion as compulsory or desirable for candidate to positions and higher and medium management. In addition, it is traced a significant interest of business representatives and managers to obtain the European diploma.

At the same time analysis of internal environment of the postgraduate education resulted in an inference that there is a gap in work of the departments lying in a fact that the department deal with two different directions of postgraduate education that are not connected with each other. Students that completed training at the Retraining Department, obtained ONEU diploma and did not address the university to advance their qualification and professional growth, as the Advanced Training Department worked mainly with specialists in financial and banking spheres to which regular vocational training is a compulsory condition of licensing and carrying out professional activity. Thus, in the established postgraduate education system it was lost the primary element of lifelong education – its continuity.

Taking into account the listed facts it was made a decision to establish the Center for Business education where it will be carried out training of high and middle managers according to MBA programme and it will be fully realized a concept of lifelong education. It implies that students completed this programme will work with the Center for Business Education in future to update their skills and knowledge.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

In 2002-2004 on the basis on ONEU it was implemented NISCUPP Project – a project of cooperation among ONEU, Minnesota University (USA), Warmia and Mazuria University (Poland). It was conducted a research of business environment requirements to modern higher education, manager advanced training programmes. According to results of the research it was made a decision to establish the Center for Business Education in ONEU. The Center for Business Education was established to consolidate interaction of the university with the business environment by means of creating of an opportunity for lifelong education of high and middle managers and entrepreneurs.

As a basis of the Center establishment it was used experience of leading business schools of the USA and Poland. Preparation for establishment of the Center is carried out with support of Minnesota University, USA within scopes of joint Ukrainian-American-Polish projects. In 2003 as a result of competitive selection ONEU became a partner of “Business Management Education in Ukraine” project (2002-2005) financed by American Agency for International Development (USAID). Within scopes of the project it was implemented programme “Future Leaders in MBA”.

In the same year it was establish ONEU Center for Business Education to implement MBA programmes, carrying out of trainings, round-table discussions, and seminars related to issues of business development, rendering of advisory services related to management and finances to region enterprises. At the next stage managers of business schools and accreditation experts (Kellogg School of Management, Northwestern University, Chicago; Leon Kazminsky Academy, Warsaw) hold a number of consultations with ONEU management related to MBA programme creation. ONEU teachers studied standards and modern training methods of MBA programmes in summer schools “MBA Faculty: Foundation for their Development” (2003), “MBA Faculty: Building Interdisciplinary Knowledge and Integrated Programmes” (2004).

The next step of establishing MBA programmes in ONEU was development of curricula according to results of internship of ONUE teachers in leading business schools of Europe and USA:

- Kellogg School of Management, Northwestern University, Chicago, USA;
- Carlson School of Management, University of Minnesota, Minneapolis, USA;
- Lebovitz School of Business, University of Minnesota, Dallas, USA;
- Ross School of Business, University of Michigan, Ann Arbor, USA;
- Leon Kazminsky Academy, Warsaw, Poland;
- Warsaw School of Economics, Poland;
- High School of Business, Luis National University, Novy Sonch, Poland.

In 2005 it was implemented a number of consulting projects for enterprises of Odessa region

according to results of which it was development cases using examples of national enterprises intended for use in MBA programme. The following stage was accreditation of Business Administration speciality and receiving of a state license to carry out activity connected with getting of master's degree in business administration. In 2006 MBA programme of ONEU was licensed by Ministry of Education and Science of Ukraine.

Taking into account interest of potential programme student to European education and getting the European diploma as a result of negotiations and consultations it was executed an Agreement on cooperation in sphere of MBA educational programmes between ONEU and National University for Science, Technology, and Management, Paris, France (CNAM). Partnership of universities fixed by this Agreement provides for organization of a joint Ukrainian-French MBA programme, graduates of which can get Ukrainian state master's diploma in Business Administration and a French state diploma of National University of Science, Technology and Management in Master of Business Administration. It became possible due to accurate analysis of ONEU and CNAM MBA programme content and combination of curricula of the Ukrainian programme and curricula of the partner university.

According to results of the conducted research of business environment to modern higher education and programmes of manager advanced training it was defined main criteria according to which potential students make a decision on admission to the MBA programme:

- acknowledgement of the diploma;
- training schedule;
- programme content;
- teaching quality;
- programme originality.
- According to these criteria it was formed ONEU MBA programme.

Acknowledgement of the diploma

ONEU MBA programme is the only state licensed programme in Odessa region of Ukraine. On the other part, National University of Science, Technology and Management (CNAM), Paris, that is ONEU Partner in MBA programme, has all 4 levels of accreditation of Ministry of Education of France. And MBA programme of CNAM (within scopes of which it operated the MBA programme with getting of two diplomas of ONEU and CNAM) is accredited by AMBA (Association of MBAs), an international organization founded in 1967 dealing with accreditation of business schools and MBA programmes).

Thus, by means of accreditation and licensing procedure in Ministry of Education and Science of Ukraine it was received acknowledgment of the Ukrainian diploma. In its turn, signing of the Agreement with the French partner provided an opportunity to get the second diploma of ONEU MBA programme acknowledged in Europe.

Training schedule

According to field standards persons having higher education and experience of work at executive positions or in sphere of entrepreneurship at least two years have a right to enter ONEU for training according to programme "Master of Business Administration". This fact imposes certain restriction to the training schedule. Preferences of potential programme students were analyzed in respect of class schedule on the basis of which it was defined the

most efficient schedule. Classes are carried out on a principle of a day-off twice per month by three days: on Friday evening (3 hours), on Saturday and Sunday – full days. According to agreed and approved curricula taking into account the accepted schedule, training duration of the programme makes 1 year and 10 months.

Programme content

All courses of the formed MBA programme were divided into 4 blocks:

Management Fundamentals

Efficient Business Management

Finance Management

Innovative Approach in Management.

Each of the specified blocks is studied during a semester each of which in its turn includes two modules. Within scopes of each module besides from compulsory disciplines it is provided optional courses chosen by students basing on a specific character of their activity and preferences. The programme is completed by writing and defense of master's thesis – a consulting project which is prepared by each student on the basis of materials of his/her organization in response to actually existing problem.

According to world practice training under MBA programmes is carried out in English. At the same time this requirement is a significant restriction for people who wish to study at the Business education Center. Therefore it was made a decision to carry out training under ONEU MBA programme in Russian and English languages. Disciplines having international orientation are taught in English and introduced into the curriculum gradually: Economics, International Economics, Marketing Management, Operations Management, Strategic Management, International Business Law, etc. Within scopes of the MBA programme students study English language during the whole period of training by means of which they prepare themselves to studying of courses in English and study at the university in France.

Teaching quality

Ensuring of high quality of teaching according to the programme was achieved due to a comprehensive approach to solution of this problem. In ONEU MBA programme it is used only interactive methods of teaching that create competitive and therefore close to real environment for students. In the process of training programme students analyze practical situations (case-study), participate in business games and psychological trainings. Special attention is drawn to communication among programme students in process of which they acquire additional professional experience. Teaching within scopes of the MBA programme is carried out by teachers-practitioners, leading specialists of the region, as well as teachers of universities of Poland, France, USA, Canada. As guest speaker it is invited managers of Ukrainian and international companies, financial institutions.

Main selection criteria for teachers of ONEU MBA programme are: experience in Ukrainian foreign companies and experience of advisory activity; fluent English; experience of teaching on MBA programmes or special internship in foreign higher educational institutions where MBA programmes operate. Requirements to leading specialists that will be invited to hold courses of the MBA programme: experience (at least 5 years); a manager position (at least a manager of a separate company department); necessary professional, communication, leadership skills and ability to work with audience, to hold presentations. Upon completion

of each course students assess work of a teacher filling questionnaires. Opinion of students is obviously taken into account in selection of teachers.

Unique character of the programme

Unique character of the programme MBA of ONEU implicates choice opportunity among several types of education:

Option 1.

4 semesters in ONEU. In this case graduates will have a state diploma of master's degree in business administration of OSEU.

Option 2.

4 semesters in ONEU+ study tour in CNAM (2 weeks). Upon graduation students will have a state diploma of master's degree in business administration of ONEU and certificate of completing a course under the programme Mini MBA in the National University of Science, Technology and Management (CNAM, Paris). Integrated two weeks' study tour to the National University of Science, Technology and Management in Paris (CNAM) is covered by agreement on cooperation and is carried out upon completion of second study year.

Training in English and attending of leading enterprises of the region in the location area of the university-partner comprise a tour programme. Students have unrivalled opportunity to appreciate business administration of these enterprises and know secrets of managerial work directly from their managers.

Option 3.

3 semesters in ONEU + 1 semester in CNAM (3 months). Upon graduation students will have two state diplomas of master's degree in business administration of ONEU and the National University of Science, Technology and Management (CNAM, Paris). Listeners, who want to have a diploma "Master of Business Administration" CNAM, the last semester study at CNAM under one of specialties: Generalist Programme, Project Management, Financial Planning, Insurance and Risk Management. The language of study is English. Term of study is 3 months. Training of Ukrainian students is carried out together with MBACNAM programme students.

Option 4.

4 semesters in CNAM (Paris). Upon graduation students will have a state diploma of master's degree in business administration of the National University of Science, Technology and Management (CNAM, Paris).

Therefore, all above listed components have formed MBA programme of ONEU, which begun in 2006 and at the present time five master courses of business administration were graduated under this programme. Programme startup was carried out by the team of the Centre for Business Education (CBE) composed of administration of CBE (scientific supervisor of CBE programmes, director of CBE, methodologist and secretary of the Center), and teachers as well, and it would be impossible to implement such scale project without their enthusiasm and persevering work. Financing of the programme startup was carried out basically owing to participation of teachers and administration of the Centre for Business

Education in various international projects, directed on improvement of business education and creation of correspondent structures in education institutions.

From the beginning of the work under the training programme of business administration masters operation of the Centre for Business Education is carried out owing to payment for training of the listeners (training is carried out only on commercial basis). More challenging task than MBA startup was assigned by the administration of the University to CBE. It was necessary as well to “hold the graduates of the Center on its orbit”. It means that having a diploma of MBA ONEU its graduates should have an incentive and will to increase their qualification exactly in our Center. The problem of a continuity of life-long training process has been solved by the Center team using two components:

Carrying out of mini-MBA programmes (as at ONEU as at the University-partner).

Foundation and operation of graduates’ club.

Mini MBA programmes hold a specific place in educational programmes of the Centre for Business Education of ONEU. They offer the innovative mechanism of obtaining of necessary knowledge in modern conditions, taking into account limited time and financial resources. Mini MBA – short-term (on the average - one month) programmes of training to efficient business administration in modern conditions, with the convenient training agenda and orientation to obtaining of practical skills. Given programmes assume, that their listeners do not spend much time for training and gain new skills of management, not being released from the basic work.

The center has developed programmes Mini MBA, which focused on studying of key business-functions. As graduates of MBA programme, as acting directors and entrepreneurs who have not received education in business administration can be the listeners of this programme. Programmes are carried out by acting experts and advisers of Ukraine and France with successful experience of implementation of business-projects. Owing to this fact listeners can receive the qualified answers to actual questions, to get necessary skills of management, as well as to meet new friends and business partners. Except for training in Odessa, the Center offers its graduates educational tours under the programmes Mini MBA in CNAM (Paris, France) with purpose of development of analytical and administrative skills on functional aspects of management.

In the year of 2010 it was decided to create a club of MBA graduates. Sessions of the club are being held bimonthly and always are dedicated to the topics determined on the basis of needs and requests of the club members and approved MBA’s Graduates Board. Today the club is not only the way of actualization of acquired knowledge for the graduates of the Centre for Business Education (CBE), it also is a considerable component of CBE advertising policy – club’s open sessions draw the attention of potential audience, which is still hesitating in the choice of educational establishment in order to obtain MBA degree.

Besides, the administration received very convenient tool for selection of the teachers for MBA programme of ONEU. The practice of conducting master classes, trainings and seminars by the applicants for a teaching programme during the sessions of the club was introduced and established rather well. Control of the quality of conducted lesson (which is carried out by the Administration during any event) is one of the considerable factors when making the decision on involvement of the teacher to the conducting of lessons at the Centre for

Business Education.

Any information on the activity of the Centre for Business Education, programme announcement and club sessions available on the website of the Centre (<http://www.center-mba.com>), for graduates mailing is also carried out with announcements and invitations to the club sessions, furthermore the Facebook page has been created and now is under administration. Thereby, on the basis of the Centre for Business Education was built and now successfully functioning life-term educational system which includes studying under MBA programme and opportunity of permanent professional development in the field of business administrating via participating of the graduates in the MBA mini programmes and regular graduates club sessions.

RESOURCES REQUIRED AND USED

As it was said above, the start of the programme was provided by the team consisting of 14 MBA discipline lecturers of ONEU and administration of the programme composed of the following:

Scientific Advisor of the programme (Vice-Rector for Science of ONEU);

Head of the Centre for Business Education;

Coordinator and Secretary of the Centre for Business Education of ONEU.

Since 2009 the Centre for Business Education has become a structural subdivision of Advance Training Department and for the moment the work of the Centre for Business Education of ONEU is coordinated by the team consisting of 5 members (Scientific Advisor of the programme, Dean of the Department, Head of the Centre for Business Education, Coordinator of MBA programme and Manager of the Centre). Financial investments of the programme startup owe to the participation of the lecturers and administration of the Centre for Business Education in various international projects, aimed at the development of business education and creation of appropriate structural units at educational institutions.

Upon the beginning of work according to the programme of MBA training, the activity of the Centre for Business Education is performed at the expense of the students attending the course (education is carried out only on commercial basis). The participation of the team of the Centre for Business Education in international projects, connected with the development of business education, enabling fund raising for study of the best practice in this sphere, remains good tradition.

FACILITATING FACTORS

Among the factors that have enabled the successful organization of the system of life-long education at the Centre for Business Education, we can outline the following:

1) High motivation of the team of the Centre for Business Education. The initiative group and each lecturer, who have taken part in the programme startup and are working for its realization, alongside with the high level of working capacity, teaching talent and deep knowledge of their subject also possess high degree of commitment to success. Human resource has become a determinant, having enabled the possibility of the startup and successful functioning of the system of life-long education.

2) Availability of financial support, received as a result of participation in various international projects, to researches in the sphere of business education, realization of

opportunity to share experience and consult the directors and lecturers of the leading business schools and trainings for Ukrainian lecturers in the MBA schools of the USA and Europe.

3) Support for the initiative of the team of the Centre for Business Education and assistance in programme organization and functioning from the side of the managing board of the University.

4) Team spirit, cultivated in the Centre, where the students become the part of the team of the Centre for Business Education from the very first lesson. Only by these means the Club of MBA Graduates of ONEU performs its work and the administration of the Centre for Business Education collaborates with the Council of The Club as to the development of the programme and improvement of its quality.

5) Demand for MBA diploma on educational services market, determining the development of the MBA programme of ONEU.

CHALLENGES AND OBSTACLES

Among the difficulties that have been overcome within the process of creation of the system of life-long education at the Centre for Business Education we can outline the following:

1) A large amount of preparatory work: recruitment of motivated and highly professional team of lecturers, researches of demands of the target group, preparation of documents for license acquisition, search for a partner, integration of programmes for signing of the contract, designing of the conceptually new courses, oriented to the managers of the highest and medium levels, etc.

2) Lack of financial resources for launching of the ambitious advertising campaign and effective promotion of the MBA programme of ONEU.

3) Insufficient knowledge of English of potential students;

4) Competition between the MBA programme of Odessa National University and distance education MBA programmes available on the education market of the region.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Innovativeness of the designed system of life-long education for ONEU lays in the creation of conditions and opportunities for the observance of the principle of education continuity.

Despite the existing system of post diploma studies, possessing of good and long traditions, realized at the University through the Advance Training Department and Retraining Department, for a long time both subdivisions were concentrated on a limited activity direction: either getting a second education or professional development.

Both these education courses are combined and function simultaneously at the Centre for Business Education, enabling not only the obtaining of intended and required education, but also permanently renovate own knowledge and skills, necessary for improvement of competitive ability of the specialist and self-efficiency.

SUSTAINABILITY OF THE GOOD PRACTICE

Today Business Centre for Business Education successfully trains 5th group of MBA students. In 2013 specialty "Master of Business Administration" passed its second accreditation, thus confirming its accordance with the requirements of Ministry of Education and Science of Ukraine for educational programmes of this level.

The Centre spreads practice of the principle of life-long education continuity among the faculties of the University. Particularly there was created an opportunity for the graduates of economical specialties (including the Retraining Department) to reduce the term of training according to MBA programme of Odessa National University on the grounds of transfer of programme basic discipline credits. The use of this opportunity enables the simplification of access to MBA education for the graduates of Odessa National University, actualization of knowledge obtained during their university course and motivation for permanent renovation of knowledge participating in programmes of the Centre and during meetings of the Club.

Besides, Centre for Business Education, together with Department of Economic Development of Odessa City Council, realizes project of creation of business incubator, where beginning entrepreneurs will get consultations and take part in business training on free basis, what is also an element of the system of life-long education and a way of “growing” a future student of MBA programme of ONEU.

TRANSFERABILITY OF THE GOOD PRACTICE

In our opinion, the key factors for creation of an effective system of life-long education within educational institutions are as follows:

- 1) Motivated and professional team;
- 2) Support for introduced changes from the side of the managing board of the organization;
- 3) Availability and sufficiency of financial resources for realization of the assigned objectives;
- 4) Proper preparation of documentary support for the processes of change introduction;
- 5) Innovativeness of organizational culture of educational institution.

LESSONS LEARNT AND RECOMMENDATIONS

Analyzing the experience, obtained within the process of creation of life-long education system within Centre for Business Education, we can outline the following decisions as the most effective:

- 1) Design of Mini MBA programmes, aimed at study of key business functions, the students of which can be both the graduates of MBA programme and acting managers and entrepreneurs without education in the sphere of business administration, what provided more opportunities for professional development of managers of enterprises, organizations and representatives of business environment.
- 2) Creation of the Club of MBA graduates, providing access to permanent renovation of knowledge and skills of MBA graduates through participation in master classes, trainings and seminars held as a part of regular meetings of the Club of MBA graduates of ONEU. The Club is a serious element of advertising policy of the Centre for Business Education and tool for selection of lecturers for MBA programme of ONEU.
- 3) Evaluating the results of introduction of various elements of the system of life-long education of the Centre for Business Education, it is necessary to mention that decision on the design of Mini MBA programme, creation of the Club of Graduates and business incubator were taken later that time had required. In our opinion simultaneous launching of all the elements might have been more effective than the applied successive approach.

Besides, the effectiveness of the business-incubator as a tool for attraction of students to MBA programme was overestimated. Consultations and trainings of business training are popular among beginning entrepreneurs what serves as a tool for rise of publicity of the Centre for Business Education, but for two years of the business incubator's functioning none of its clients has become a student of MBA programme. Perhaps, two years are a small term for our clients to realize the necessity of obtaining economical education of higher level.

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19. Internationalization as a Tool for Development

Ivane Javakhishvili Tbilisi State University, Georgia

EXECUTIVE SUMMARY

The reforms carried out during 2004 – 2007 years at Ivane Javakhishvili Tbilisi State University (TSU) have prepared the University to become an outstanding higher education institution in the Post-Soviet region. Much has been achieved during the reform process during which TSU underwent significant restructuring; however there are still many things to accomplish. It cannot be emphasized enough that universities are complex institutions and the processes of restructuring, redefining priorities, and recreating their images are not easy tasks. Numerous aspects must be taken into the account. Education quality itself is not guaranteed through solving one problem; rather it is achieved through addressing a wide range of problems and challenges.

The case study has revealed that internationalization has played a decisive role in the advancement and revision of the university practices, improvement of the quality of education and research and establishment of sound international networks. In the process of the development of this case study, we conducted several interviews with the heads of the administrative and academic units in order to get more insight into the complex process of changing values and priorities and adapting to international arena of higher education.

BACKGROUND INFORMATION

Founded at the beginning of the 20th century, TSU is the first Georgian University and the first higher education institution in the South Caucasus. Considered as a “white temple of science and education” TSU has always played a crucial role in the life of Georgian society. TSU has had a historical mission to support the development of a democratic society and foster affable relations with international community via its students’ output and through international educational, scientific cooperation.

First opened in 1918 TSU bears the name of its founder Professor Ivane Javakhishvili who gathered Georgian scholars educated in Europe to establish a national university. Being a renowned historian with a Western education himself, Javakhishvili contributed greatly to making “The Georgian University in Tiflis” as it was then called, a classical European institution of higher education. Today, the university’s main directions, principles, values and reforms are carried out dynamically in a systematic, coordinated manner and have placed TSU on a development path leading towards a common European Higher Education Area.

TSU is a driving force behind Georgian higher education. As a forward-looking university, TSU realizes that it faces new demands and strives to meet the challenges of the century, and to prepare its students for further professional activities.

As a university with an outstanding reputation and traditions, the cream of Georgian university entrants frequently name TSU as their first choice. TSU is the largest university in Georgia with over 22 000 students and 6 enlarged academic units (departments):

- Faculty of Humanities;

- Faculty of Economics and Business;
- Faculty of Law;
- Faculty of Exact and Natural Sciences;
- Faculty of Social and Political Sciences;
- Faculty of Medicine.

Along with bachelor's, master's and doctoral degree programs, TSU also implements higher vocational education, as well as short and long term certification programs. Based on close cooperation with foreign universities, Georgian students have opportunities to participate in exchange and joint international educational programs and gain double academic degrees.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Internationalization

THE WIDER CONTEXT

The Georgian education system has seen substantial changes in the last decade. The transition phase in Georgia's political, economic and social lives has prompted the country to shift from a planned to a market economy. During the years of 2004-2007, the government of Georgia took on a difficult task of revamping its higher education system to streamline it with Western Higher Education Area. After Georgia joined the Bologna Process in 2005, all Georgian Higher Education Institutions (HEIs) implemented a three-cycle education and introduced ECTS system. In 2004, the Law of Georgia on Higher Education was adopted, where upgrading the personnel qualifications through university Quality Assurance Services at an institutional level and the National Center for Education Quality Enhancement at a national level were identified as primary targets for systematic evaluation and improvement. Georgian universities were able to make significant breakthroughs in transforming the centrally managed education system typical of Soviet times into more autonomous and dynamically governed ones.

Educational traditions have a longstanding history in Georgia. In the Middle Ages a number of educational centres were actively involved in the development of Georgian educational culture. When the country gained independence at the beginning of the 20th century, one of its first moves was to establish the university, the first higher education institution in Caucasus (1918). Soviet Education system could be described as centralized and fragmented at the same time with the control over the career choices of the students. The state bodies in charge of higher education were responsible for determining the education policies, while the universities were responsible for implementing those policies. The same approaches were exercised despite the changes in the system between the years of 1991-2003 (The Main Directions in Higher Education Development in Georgia. Decree of the Parliament of Georgia, 2002).

But the education system also had its strengths. The Soviet educational system, in general, was considered to be well-organized and of high quality. It was in part copied from the Prussian model of education, which was based on teaching-oriented values and a centralized system of management. Illiteracy in the Soviet Union, including Georgia, was virtually eradicated. Furthermore, the Soviet Union advanced fundamental sciences to a significantly

powerful level; but, the main drawbacks of the system were its rigid ideological orientation and limited inquiry/research in the social sciences (The Main Directions in Higher Education Development in Georgia. Decree of the Parliament of Georgia, 2002; Orkodashvili, 2010).

During the 2004 – 2007 reforms, many of these issues were addressed by every Georgian university, with TSU being the major reformer and exemplar for other universities nationwide. In spite of the improvements achieved during those years, Georgian HEIs still face significant struggles as they enter the rapidly developing world of internationalized and globalized higher education. These processes affect the functioning of the university significantly at all levels of the university life.

Outdated teaching and learning methods

Teaching and learning at TSU still have strong influence from the Soviet times with one-sided transfer of knowledge to the passive audience. In most cases, this approach does not promote independent thinking and problem solving skills among students. After the collapse of the Soviet Union, the majority of the academic literature which closely followed the communist ideology became obsolete. There is a need to update this knowledge/literature and then to transfer it into study materials for students. Translated copies of textbooks in various fields have been encouraged by donor organizations; however, even the translated materials cannot fill the gap in the country's specific knowledge among students. The inability to utilize foreign language in working hampers professors from familiarizing themselves with professional materials and resources pertinent to their fields of expertise. Only a few professors in the fields of the humanities, social sciences, law and economics, who possess some language skills were able to compile readings and textbooks for the students. The others remain dependent on knowledge acquired during Soviet times, and in rare occasions on some master classes delivered by colleagues from foreign universities.

Access to Resources

In the process of the reforms, the university had to tackle many profound challenges. It failed to address the issues related with the improvement of access to resources. The biggest challenge lies in the fact that a large number of professors do not have working or learning experience in the environment, which TSU seeks to achieve. Access to resources and well-equipped libraries create an environment, which stimulates teaching and learning behaviors, and makes academic staff members feel themselves as part of the university community. Almost 50% of the books in the university library branches are not updated and there are fields, especially in social sciences, where literature is not available for students and professors.

Largely the deficiency of the access to the resources is caused by the low level of digital literacy among the university employees. Digital literacy is still very low among Georgian academics. It is not only a matter of having computers and other technological devices. It is related with knowing how to evaluate, use and manage information obtained from the web.

Management and Administration

Strategic planning and management of higher education within the educational organizations, which had been completely disregarded during the Soviet times and in the first decade after the dissolution of the Soviet Union, are still underway. In order to determine which way to go and how to prioritize issues, staff needs constant changes and

transfer of knowledge (Kelly Novak Opportunities (KNO), 2008)

RATIONALE AND INTENDED RESULTS

As in every other country in the world, the Georgian labor market is constantly changing and becoming more oriented towards international experiences. It is becoming more open and competitive. The demand for high skills is growing, and the university – with its links to teaching, research and innovation – feels it has a crucial role in equipping students with the skills necessary to integrate in the job market. We acknowledge that the country's economic growth and prosperity ultimately depend on the efforts that higher education managers and educators take.

In today's digital era, students want to choose the topic, means and time for their education: what they learn, where they learn and when they learn. Consequently, these prompt higher education institutions worldwide to change their practices in order to improve their competitiveness and be attractive for the local and international students (Androulla, 2013). The concept of internationalization is continuous and challenging and is seen to have positive outcomes if successfully managed: an international perspective in education and research, links with the universities in other parts of the world, increasing mobility for students, teachers, researchers and administrators, improved language skills, increased preparedness for managing meetings across different cultures, and international standards of quality assurance (Policy Statement on Internationalisation (2005).International Office External Relations of Göteborg University).

Globalization means that the distance in time and space between different parts of the world is diminishing because of, for instance, the development of information technology; our experience is that "the world is growing smaller". The world economy is becoming increasingly integrated, whereas the autonomy of national economies is diminishing (Policy Statement on Internationalisation (2005).International Office External Relations of Göteborg University). As Knight (2008) argues, international dimension of higher education is not new. For centuries, scholars have exchanged education, but today internationalization is the main thing that impacts education worldwide.

Internationalization is in many ways an important component in the Tbilisi State University's work on quality assurance; research and teaching are exposed to international competition and given opportunities for cooperation, and better knowledge about the world is a necessary factor in all knowledge generation. Creation of student centred environment became crucial in the internationalized environment, the concept that has been highly promoted after the implementation of the Bologna Process (2005). In a student-centered environment, students don't depend on their teachers or the university administration all the time. This will make education programmes more transparent and comparable and make it easier for higher education students and staff to become mobile across the European Higher Education Area (Attard; Di Ioio; Koen and Santa, 2010).

In the past, universities have protected the national culture, but today the principles of internationalism prevail over many other concerns. International exchange is essential in order to give students and teachers access to international academic environments and to remain competitive on an increasingly globalised education market.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The Process of Internationalization at TSU

The challenges and changes discussed above are especially apparent in the countries under transition, like Georgia is with the multifaceted problems and challenges to address in the most efficient time frame and manner. Among many strategic aspects, harmonization of the laws and the regulations governing education process, taxation, entrepreneurial activities of the universities are on the list. TSU administration believes and used to believe in the times of reforms that in order to address the issues above there is the need to engage in various knowledge and experience sharing activities with the counterparts from abroad, to change management culture and overarching values that are at the heart of higher education.

To keep up with these tendencies, students' expectations towards the higher education system are changing too. Most professions were affected by an imperative that Internet has brought and keeps bringing to higher education and job markets. Students want to choose what they learn. Twenty years ago, most of the fields of study in Social Sciences were almost non-existent at Ivane Javakhsishvili Tbilisi State University. Only after the liberation from the Soviet Union Georgian educators started building the programs such as International Relations, International/EU Law, Political Science, Mass Communication and some others. The professors who were teaching those classes had to upgrade their knowledge first. Changes were introduced in almost all the fields of study. The following stage was to develop the ability to deliver the classes in a new format.

Successful and competitive teaching doesn't include only the materials and resources that are distributed among the students; it also requires efficient and effective teaching methods. Once popular in almost every higher education institutions in the world, traditional methodology of teaching with active teachers and passive audience, became an obsolete phenomenon. The obtrusive nature of internalized higher education is difficult to halt, and wherever we are in this world, the concept model of internationalized higher education will always be a challenge. Internationalization, in all its different aspects, stands, for the reasons of quality, and for part of all knowledge generation.

Department of Foreign Relations

Sound Internationalization Strategy and solid structure of foreign relations office is important for Tbilisi State University to enhance its internationalization endeavors in order to improve competitiveness within the country and on an international arena.

In order to enhance the work of Department of Foreign Relations one of the main trends was the change in the requirements to recruit the staff. Those with western education and - good knowledge of languages (emphasis made on English) were given priority during the 2004-2007 reforms. Currently, Department of Foreign Relations at TSU has a well-defined office - with the head of the department and 9 employees. It frequently recruits foreign nationals among its staff members. During 2010-2012, a German national worked at the department and liaised with the German universities. From 2012, the department employees a national of the United States, whose area of expertise is project related work.

International Projects and Exchanges

Since early 90s, TSU started implementing EC funded TACIS-TEMPUS projects and in 2007

Erasmus Mundus exchange projects came on. Tbilisi State University is the leader not only in the country, but among the Caucasian universities with the record of 26 TEMPUS projects (12 of them ongoing). To increase the number of successful projects and efficacy of the project writing, the Department of Foreign Relations and the Department of Research Development Department at TSU assigned their staff members to projects. Since then, the number of submitted projects from TSU has increased almost with 1/3.

There are 2 people assigned to project design and proposal writing at the DFR, which is operative from 2010. Since then Department of Foreign Relations participated in over 25 international and national projects, both small-scale and large-scale ones. Out of those, 8 projects were initiated, designed and submitted by TSU. Out of those 8 submitted projects 6 projects were nominated for funding. Currently, DFR is an institutional coordinator of 10 large-scale projects funded by European Commission. Most of these projects deal with the improvement of administrative and managerial capacities of the university personnel. In addition, these projects envisage establishment and/or upgrade of existing structural and administrative units and development of certain services within the university.

Mobilities

TSU has had significant number of exchange programs for many years already. The first exchanges were administered already in 1960s with East German universities and other Eastern European countries. The number of exchange programs have increased considerably after the year of 2006 and onwards. Currently, DFR runs student and faculty exchange programs with almost 30 universities in Eastern and Western European universities. Altogether, the number of outgoing students funded through bilateral scholarships and government stipends is 74 per academic year. The number of incoming students is lower, not exceeding 40 per year.

TSU has more than 150 active partnerships with higher education institutions worldwide. However, the scholarship schemes are developed with 25 universities only. In 2007 TSU became an active member of the consortia member of an Erasmus Mundus Action 2 projects. At this time, it has been the member of 4 ongoing EMA2 projects and two more winning projects will start in fall 2013. In the frame of EMA2 projects 120 outgoing and 35 incoming students, professors and staff have benefitted between the years of 2007-2012.

In addition to the above-mentioned data, Tbilisi State University spends certain amount of its financial resources on the mobility of its students, staff and professors. In 2012 the amount spent on the trips of its staff (administrative and academic) was 1.7% of its total yearly expenditures. While, the amount spent on student mobility was 0.5% of the total annual spending. In 2013 the total amount allocated on business trips of its staff increased with 0.2% (and made 1.9% of the annual spending) and the funding allocated for the student mobility is 0.6%.

In 2012 TSU started administering the project on student and faculty exchanges in cooperation with Aleksanteri Institute (at the University of Helsinki). The project BASERCAN (Baltic Sea Region-Caucasus Network), submitted by Aleksanteri Institute in 2011 to North-South-South Higher Education Institution Network Programme received funding to support exchanges between Finland, Georgia and Belarus for 2012 – 2014.

Foreign Professors at TSU

In January of 2012, the Ministry of Education and Science of Georgia financially supported a pilot program titled “Foreign Professors at TSU” at TSU. Through this program, TSU was able to invite a broad spectrum of professors to deliver short subject-specific courses at TSU’s six Faculties. The duration of this pilot program was one year, during which TSU arranged 65 visits from professors of leading universities from across the globe.

The goals of the project were to:

- contribute to the ongoing internationalization process at TSU through academic activities and networking with international colleagues;
- allow students who do not have the possibility to participate in a mobility scheme to benefit from the knowledge and expertise of academic staff from international higher education institutions;
- encourage joint applied research on current regional and international issues;
- promote the exchange of expertise and experience in research and pedagogical methods;
- explore possibilities for future cooperation.

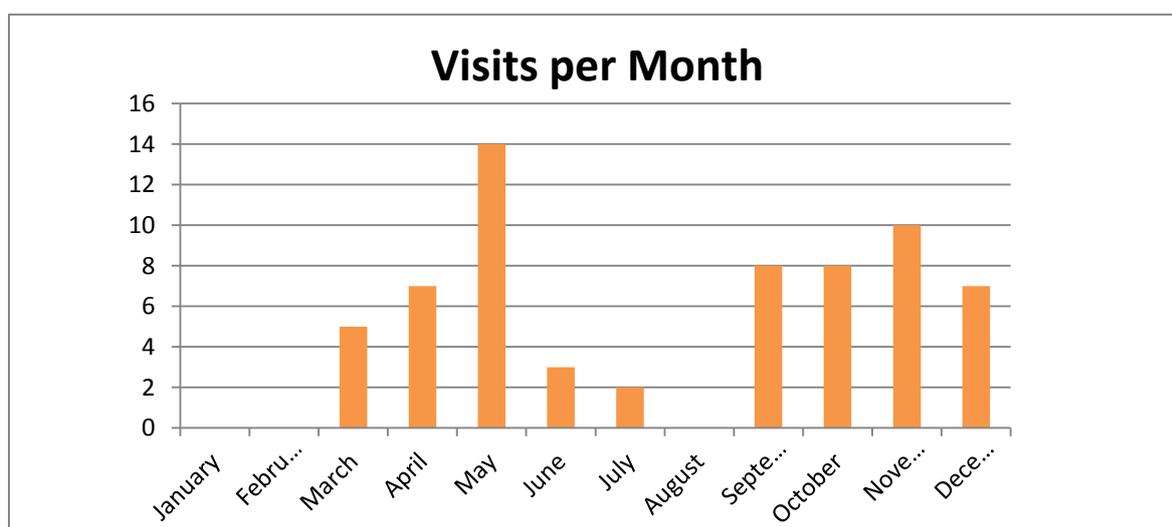


Figure 1 Please note that this graph uses the beginning date of the professors’ visits as the date in which they visited, even though in some cases professors’ visits spanned between months.

Programs Instructed in Foreign Languages

From the year of 2006 foreign language instructed programs started to emerge at Tbilisi State University. Most of these programs offer joint degrees or double degrees and were implemented with the financial support of the donor organizations or the costs were co-shared between Tbilisi State University and a partner university abroad. The University of Cologne and Tbilisi State University have established a joint degree program in Law. Students enrolled in this program have the opportunity to study law at TSU and the University of Cologne. In the first year, successful graduates of this program can earn their LL.M. through the University of Cologne. Should students wish to earn a Master’s of Law from TSU as well their LL.M., they can continue their studies at TSU for an additional year.

The International School of Economics at TSU is committed to building a sustainable

economic community that can represent the South Caucasus countries in the international economics profession. ISET's MA program in Economics was launched in fall 2006 as a graduate program at Tbilisi State University, serving the entire South Caucasus region. The program takes students through a challenging two-year curriculum, comparable in content and quality to the first two years of study in reputable Ph.D. programs in North America and Western Europe. All courses are taught in English by highly qualified international faculty. The mission of the International School of Economics at Tbilisi State University is to provide economic education and research at the highest level for the benefit of the public and private sectors in the South Caucasus countries. ISET's major program areas - teaching, research and outreach - contribute to the fulfilment of its mission.

The Institute for European Studies (IES) at Tbilisi State University is a Master of European Studies (MAES) was started in 2007 as a project funded by EU "Establishment of a Centre for European Studies". The Program involves 4 TSU Faculties aiming to provide the students with the best knowledge about Europe: Faculty of Economics and Business, Faculty of Humanities, Faculty of Law, Faculty of Political and Social Sciences (www.ies.tsu.ge). Recently, IES announced that it is going to establish an Interdisciplinary PhD Programme in European Studies.

The Centre for Social Sciences is a network institution of Higher Education Support Program of Open Society Institute in the South Caucasus established in 2001 with the aim to enhance teaching and research in social sciences at Tbilisi State University. Transformation in the South Caucasus is an international, interdisciplinary, English language Master's Program administered by CSS (Degrees offered: Master of Social Sciences (MSocSc); length of study: four semesters - 1.5 calendar years; graduation requirements: 120 ECTS). The program is designed for people who are interested in economic, social and political transformation in the South Caucasus; this course has a strong international focus. It has recruited students from all three of the countries in the region. All students study together on taught courses for the first year in Tbilisi and in the second year do a four-month internship and spend last four months on writing a dissertation. The program incorporates elements of public policy and policy analysis, economics, international relations, foreign policy analysis, nationalism, conflict resolution, academic writing and research methods.

In 2008 TSU started administering an English language Master's program in Public Administration Program together with German University of Administrative Sciences – Speyer. Among the three programs jointly administered by TSU and German universities the most recently established one is (2011) program is a double degree MBA program in Managing International Enterprises instructed both in German and Georgian. <http://www.mie.uni-jena.de/>.

Among many others, there are English language programs, which were developed in the framework of TEMPUS projects. Medical Molecular Biology MSc. Program, which is a joint program with the University of Westminster, UK www.tsu.edu.ge. The other one MS program in Applied Bio-science is developed in cooperation with Armenian universities with the The University of Alicante (Spain) as the lead partner. The project started in January 2010 at Georgian and Armenian universities and will prepare students for scientific careers in industry, or for professional careers in bioscience-based enterprises that delve into

marketing, business development, technology transfer and many other fields.

Language Barriers

TSU identified language as the most important barrier when for its development and international pursuits. In 2009-2010 Tbilisi State University management and administration personnel attended English Language classes offered by the teachers of British Council Georgia, which was funded from the TSU budget. On top of this, one of the main trends in the improvement of the quality of education was a drastic change in the selection of the academics to teach at TSU; Those with western education and/or those, who had years of practical professional experience, were given priority.

Outdated teaching and learning methods

In 2004 TSU signed an agreement with Open Society Foundations Higher Education Support Programme to contribute to higher education reform by supporting promising local scholars through the Returning Scholars Fellowship Program (Academic Fellowship Program). The fellowship promotes the return of scholars to TSU, their positioning within academic circles at TSU, and their continued professional development. In the frame of AFP program, around 40 Georgian scholars were involved in teaching and research at three Faculties in Tbilisi State University. Moreover, at different times through various projects and/or individual endeavors of some professors, master classes are offered to the TSU professors in methodology and research methods. For these efforts, Tbilisi State University allocates space and funding necessary for lodging and honoraria of the invited foreign specialists.

Access to Resources

From summer 2008, the British Council started operating at Tbilisi State University to provide information and learning services to new and wider audiences. Through this partnership British Council library at the TSU serves as a cultural and information centre for students, academics, young professionals and all people interested in British culture and education. From 2004 TSU became a subscriber of major scholarly databases - EBSCO, JSTORE, LEXIS-NEXIS and some others. Gradually, it updated the libraries on its premises either from its own financial resources, or through various local and international projects.

Management and Administration

In 2009, after the major revamp of the administrative infrastructure (2004-2007), another round of reforms was initiated at TSU to address difficulties existing in the management system of the University. In October 2008, TSU hosted a team from Kelly Novak Opportunities, which carried out performance assessment of the TSU. The project was sponsored by USAID/FORECAST program and administered by World Learning – Institution Performance Assessment Services. The emphasis was placed on the elements of the management system and the relationships of the elements to the implementation of the strategy and operating policies and processes.

As an immediate reaction to the assessment report and recommendations and realizing urgent need to modernize university management system with the help of latest information technologies widely used in administrative activities for modern university governance, TSU initiated 3-stage changes in the management system under the umbrella of the project Improving TSU Management Capacity:

Introduction of Enterprise Resource Planning and Customer Relationship Management

(ERP/CRM) system;
Introduction of university management software;
Development of software for automated documentation management system.

In the frame of this project, a series of meeting sessions were carried out by two American experts from the University of New York (Sunny Delhi campus) with the TSU governing bodies aimed at observing and assessment of management needs at TSU. The recommendations given by the experts emphasized the need of updating strategic plan, reviewing mission statement, defining goals for research and education, identifying opportunities for collaboration and innovation, developing strategies for recruitment and retention and upgrade of the skills of the faculty and developing tools for improving internal communication.

Internationalization from the Perspective of TSU Management

Further insight is required in order to identify the challenges and opportunities of internationalization at TSU. For this, we conducted a series of in-depth interviews with the key management and administrative officers at TSU. Among them are: the head of the TSU administration, Deans of the Faculties, the director of the International School of Economics (ISET) at TSU, the Head of the Department of Academic Process Management and the Head of DFR.

David Chomakhidze, Head of the Administration stated during the interview that the biggest benefit of internationalization for Tbilisi State University would be to integrate academic and administrative process in a better way and also to harmonize the laws with whatever has been accepted in developed western countries. Student enrollment, credit recognition and other procedures related with the studies abroad and foreign students at TSU are to be done after the Minister's decree.

"An international student willing to study for a semester at TSU has to go through the same procedure as a student doing his/her full-degree study at the university. Whatever we do in this regard, there is not much that can be changed internally", Chomakhidze says. Mr. Chomakhidze's view on the decision-making process is quite optimistic. He said that after the reforms in 2006, strictly top-down decision-making system has changed into a more liberal one, where individuals at the various management levels were involved into the process.

From the perspective of the Head of the Quality Assurance Service Prof. Tamar Vepkhvadze the best thing the university can do to internationalize is to have as many exchange programs as possible and to set those standards for acceptance and enrollment of these students that are part and parcel of the leading western universities. "The university has too many problems at an institutional level. Mobilities are very difficult. As we have only the 1st and 2nd buildings that meet international standards, we are not able to accept the students. Also, there is no campus where exchange/international students/visitors could live, "Prof. Vepkhvadze says.

"The level of internationalization currently is not bad, however, there is no doubt it is not enough. This is not enough for us to have diverse interdisciplinary programs. These programs

are designed in the frame of international projects. In terms of our cooperation projects at all levels, institutional, management and functional level we heavily rely on foreign funding. These relationships emerge spontaneously and they can disappear,” Prof. Vepkhvadze says. Dean of the Faculty of Law Prof. Irakli Burduli thinks that despite many changes, there is still more to be done. “First of all, there should be more coordination of administrative units and synchronous work for all. Certain major steps have already been taken in this direction. It is also provided in the university by law that any issue that is submitted for discussion to the Academic Council should also be agreed with the Faculties to whom it directly concerns. Due to these and some other facts administration and management has become easier, even though there are some important steps that should be undertaken to meet international standards of management and administration”, Prof. Burduli noted.

According to him, the legislation is the main obstacle. He further stated “The approach to HEIs with 100 students and towards those that have 20,000 is similar”. Prof. Burduli believes that the main issue is related with the lack of the financial resources. “As in everything else, financial constraints are behind every issue. One thing that we managed is that TSU is financially stable when it comes to salaries and some other stuff. However, we have reached the maximum student population we can take. All the faculties have decent number of students. Consequently, we cannot aim at increasing our financial sources by accepting more students and student fees. We should look for other ways, among them attracting foreign students. And again here we need more foreign language programs,” Prof. Burduli said.

Eric Livny- Director of International School of Economics at TSU believes that even smaller things as the building, the office and library are important components that should be taken into regards while focusing on internationalization. “The entire international project should be overviewed. It is important to infiltrate the research projects. For us [ISET] to sustain ourselves is that we need more undergraduate international students. We have an idea of setting up lecture courses taught in English by PhD lecturers that graduated from this University and also universities abroad. This way TSU can gain international recognition,” Mr. Lyvni stated.

Regarding the management and administration at TSU Mr. Livny thinks that there are “too many administrators than initiators and this should change. Initiative should be more rewarded. This is how I look at things at my faculty - anything that is not forbidden is allowed.” “Our main focus on international students is such countries as Iran, Turkey and at smaller extent Ukrainians, Latvians etc. Our goal is to expand through countries. Not only students but also in terms of faculty members and professors,” Mr. Livny stated.

Prof.. Akaki Kheladze – Dean of the Faculty of Economics and Business believes that TSU needs to become more focused and goal oriented: “First of all we should know where we are going, which direction, what are we aiming at, is that something more European or more American. At this stage we don’t know yet where we are going. It is spontaneous. The issue of orientation is open,” Prof. Kheladze said.

According to Prof. Kheladze, there is no systemic approach to internationalization; it is based on individual’s efforts. “As a rule, specific professors from different faculties decide which university to communicate to. There is a top down management practiced at TSU. Therefore,

it would make more sense if internationalization strategy were applied by central administration and top management rather than as faculties taking measures on their own.” Regarding the challenges, Prof. Kheladze stated that the main one is the working culture “which means comforting the status quo and negating all related with change no matter if they are positive or negative. Despite top management’s support of the initiatives and changes, work culture and practices do not allow for their implementation. One of the ways to approach it would be to establish some sort of reward system in order to incentivize the initiative.

Head of the Department of Foreign Relations, Ms. Tea Gergedava believes that all the major breakthroughs were made, which enabled Tbilisi State University to accomplish all its main goals in a relatively short time-frame. “This has been just less than 10 years since we started rigorous internationalization processes and we already have clearly visible outcomes which manifest in the number of increasing population of exchange students, staff and faculty, joint and double degree programs, high number of international networks and international projects,” stated Ms. Gergedava. However, according to Ms. Gergedava there are many more challenges that should be addressed. “The education system in Georgia is still precarious. Language barriers are detrimental for achieving our goals. Likewise, the process management and the quality of teaching and research are also drawbacks for the completion of the transition phase of higher education system.”

“The opportunities are that through various instruments provided by our internationalization pursuits we can raise the popularity of English language among younger generation of students, professors and obtain grants and funding from international donors,” Ms. Gergedava said. Regarding the long-term development goals for the Department of International Relations, Ms. Gergedava believes that at least 30% of TSU student population should have an opportunity to spend a semester in the universities abroad and at least 15% of the TSU professors should be able to spend a sabbatical year in foreign universities.

During the interviews with the management and administrative staff of the university, we asked them to talk about the challenges and obstacles in the process of the implementation of the above-mentioned processes. Most of them agreed that managing internationalization is a challenge and opportunity at the same time that would support the university management to transform management style, management capacities, improve human resource management and practices and upgrade skills. According to them, the main problem is financial resources and changes in political climate. Changes in politics usually affect the university practices.

“This means that the ongoing processes are put on hold and followed by stagnation until the new vision and direction is determined. Policies should be uninterrupted and no matter who comes or leaves the power, education policy should be continual,” Prof. Tamar Vepkhvadze, Head of the Quality Assurance Office said.

Infrastructure is a challenge as well. TSU top management believes that one of the obstacles for example to accept incoming international students is the lack of the renovated space that would create teaching and learning friendly environment. What is more, nonexistence

of campus housing is a major impediment to recruiting international students. Despite technological advances in the 21st century, inequalities in the adoption and integration of information and communication technologies continue to challenge the application of concepts and areas of internationalization.

Equipping academics with competencies necessary to manage classes, supervise and advise students, improve individual leadership skills, and develop creativity and initiative among students is crucial in the modern academic environment. It is also a challenge to help professors understand organizational culture, which will enable them to find ways and methods of advancing their respective departments and the university itself.

International exchanges are administered either through the framework of bilateral agreements between TSU and its international partner university, or through individual agreements with partner universities. The roughly 250 beneficiaries of the scholarships represent only a small number of TSU students and faculty members (overall 22, 000 students and approximately 3,000 faculty members, or 0.6 percent of the total potential beneficiaries).

FACILITATING FACTORS

Facilitating factors were the readiness and the willingness of the Georgian higher education institutions, including TSU to change and the initiative of the Georgian government and the Ministry of Education and Science to transform.

CHALLENGES AND OBSTACLES

The challenges and obstacles that TSU had to overcome to start the process of internationalisation goes beyond the university level discussion, as most challenges were of global nature and were addressed at a national level.

SUSTAINABILITY OF THE GOOD PRACTICE

It is significant to note that through the international cooperation projects and networks TSU managed to forge institutional cooperation with most of the universities. This is demonstrated in the increased number of the submitted projects of various kinds. For example, in 2013 the project team at the Department of Foreign Relations at Tbilisi State University in cooperation with the University of Seville (Spain) and National Kapodistrian University of Athens (Greece) designed and submitted two projects to EACEA in the framework of Erasmus Mundus Action 2.

TRANSFERABILITY OF THE GOOD PRACTICE

Despite its pitfalls that are displayed by the absence of the internationalization strategy the successful case of Tbilisi State University was used as the best practice by a TEMPUS project "Internationalization in Central Asia and Eastern Neighbouring Area" (516663-TEMPUS-1-2011-1-ES-TEMPUS.SMGR). The project aims at strengthening capacities for international cooperation in Georgia, Belarus and Tajikistan in order to contribute to international networking and exploitation of institutional and national internationalization potentials.

Among the 6 project partner universities from the three earlier mentioned countries (Tajik State University Of Commerce (TJ), Tajik Technical University (TJ), Belarus State Economics

University (BY), Belarusian Trade, Economics University Of Consumer Cooperatives (BY), Gori Teaching University (GE)), Tbilisi State University is the most experienced partner with the most advanced internationalization practices, the experience of which has been successfully shared with and transferred to other 5 project partner higher education institutions.

LESSONS LEARNT AND RECOMMENDATIONS

The long-term vision on how the internationalization endeavours of the university should be developed. According to the TSU management interviewed for this case study, for sustainability and better outcomes Tbilisi State University has to have an Internationalization Strategy and Action Plan. A potential strength of a Strategy and Action plan is to propel new opportunities, ensure engagement of different stakeholders and ensure sustainable development.

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20. Experience of Social Partnership and Cooperation with Labour Market

Alecu Russo Balti State University, Moldova

EXECUTIVE SUMMARY

Alecu Russo Balti State University has a 68 year old experience of teacher training for the national economy and continuous education of the employed specialists. In recent years many graduates of the University are placed successfully (according to the given rating) on the international labour market and work in different places of the world today. Simultaneously, the labour market needs are changing. This reality calls for strengthening the efforts to improve the competitiveness of the institution, supporting economic growth and employment by training highly qualified specialists. Development of social partnership and cooperation with the labour market is a key priority for Alecu Russo Balti State University.

The case study analysis reflects the perimeter of the labour market - the higher education institutions in Moldova. The general context reflects the correlation between the labour market and the university and addresses a number of issues that need to be taken into account in university preparation: a correlation of labour market requirements to the educational offer, the need to develop professional skills in accordance with the employers requirements, the need of professional counseling to graduates, correct orientation to the labour market, the need to prepare appropriate academic cooperation of specialists.

The experience of developing the social partnership and cooperation with labour market at Alecu Russo Balti State University began in the late 90s through the opening of new specialties and exploring the job market in order to improve the quality of specialists. The optimization of the process occurred in 2005, after joining the Bologna process, in this period the University has diversified substantially the academic offer. The implementation of national and international projects focused on developing skills in social partnership and cooperation with labour market strengthened and provided that practice value. The diversification of social services in Balti and placing it in the free economic zone of the north region has generated new experiences to develop social partnership and cooperation with the labour market, including the international agreements too.

BACKGROUND INFORMATION

Alecu Russo Balti State University was founded in 1945 and presently has become the center of the University Complex which embraces all levels of training specialists for the national economy (Bachelor, Master and Doctor levels), as well as continuing education of specialists who are already employed. The University's Mission is based on the following components: education, professional training, research, contribution to the development of the contemporary society. The University has about 6000 students (undergraduates, Master students and PhD students) at 44 specialties and 26 specializations within eight faculties (Faculty of Philology, Faculty of Real Sciences, Faculty of Foreign Languages and Literatures, Faculty of Psychology and Social Work, Faculty of Educational Sciences and Arts, Faculty of

Law, Faculty of Economics, Faculty of Natural Science and Agro-ecology). The scientific potential of the university is represented by 11 Doctors Habilitate, 122 doctors, nine University Professors and 71 Associate Professors. The employees of the 20 specialized departments provide educational services in Romanian, Russian and at certain specialties, in English, German and French.

In 2009 Alecu Russo Balti State University was awarded the international certificate ISO 9001-2000 of the European University System of Quality Management. On December 5, 2011 the University was certified by the certification bodies of the management systems IQNet (The International Certification Network) and RSQA (Romanian Society for Quality Assurance) in the fields of higher education and training university lecturers and academics. The certificate confirms that Alecu Russo Balti State University has implemented and maintains a quality management system according to the international standard ISO 9001:2008. In 2011 by the Decision of the National Council for Accreditation and Attestation no. 581 from June 3, 2011, the University was accredited as an organization from the field of science and innovation with all rights to carry out research, innovation and technology transfer in five research areas. The title of the institution is *Internationally Competitive Organization* (category B).

Alecu Russo Balti State University organizes doctoral studies in eight specialties. There are four specialized scientific seminars and a specialized scientific council. The University has four interinstitutional research centers and 12 laboratories for scientific research. The University is also the founder of four scientific journals and the co-founder of two other scientific journals. The University Scientific Library, ranked by the Government of the Republic of Moldova as belonging to the highest category, has a book stock of about 277700 titles in 1013293 copies (in 42 languages). It contains several special collections, is computerized and connected to the Internet (<http://libruniv.usb.md>).

Participation in international projects allows the University employees to make themselves familiar with the opinions of the people in charge of higher education in the European zone, to share their own experience and to disseminate the acquired positive practice. Simultaneously, increased attention is paid not only to the problems that higher education in this country faces, but also to the strategies of solving them. Erasmus Mundus, Tempus, Pestalozzi, DAAD, CEEPUS, FP7 programs should influence positively the redesign of new curricula and courses, should integrate international elements in courses, redesign the degrees, the impact on students' personal development and broaden the research activities, the networks and the future career opportunities.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Irrelevance of graduates' skills to labour market needs

THE WIDER CONTEXT

Argument

Since 1944 the present territory of the Republic of Moldova was part of the Soviet Union – a socialist country with centralized economy. In 1991, with the collapse of the USSR, the Republic of Moldova obtained its independence and started a long and tortuous transition to

a market economy. This period was marked by an increase in demographic flows and in flows on the labour market. Until 1989 the training of specialists with higher education was conducted in accordance with the state order and the syllabuses were developed in a centralized way. The outputs of the education system were followed by immediate employment. After the transition to the market economy and the output collapse that followed after Moldova got its independence, the situation regarding employment has changed radically and developing study paths has become a priority for universities. The relationship between institutions of higher education and the labour market, which should have been adjusted to the new realities, remained out of systematic approach.

Orienting the strategy of developing higher education in the Republic of Moldova to European Standards, which found an explicit embodiment in the objectives of the Bologna Process, determined the need for an essential reform of university curricula at the level of both content and structure: the switch to three academic cycles, the introduction of the credit transfer system, the recognition of diplomas etc. - all aim at forming a common European area in higher education and at increasing the chances of young people's employment both in the national and in the foreign labour markets.

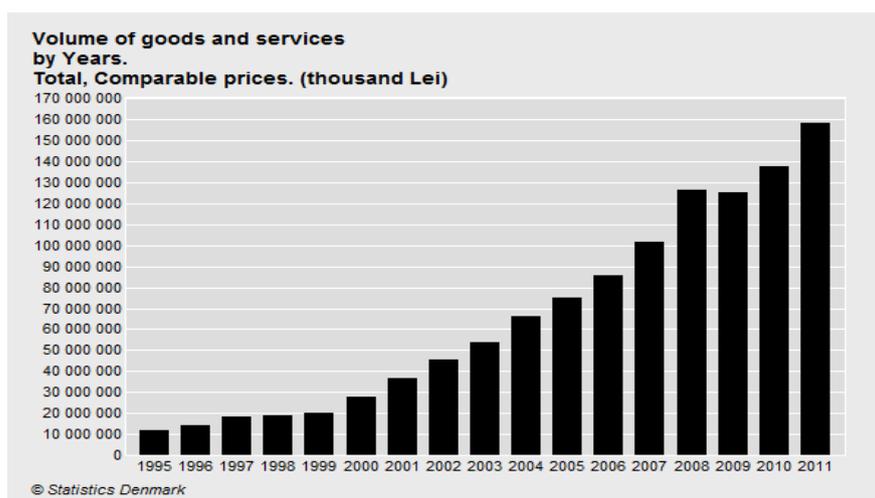
At present the internationalization policy of Alecu Russo Balti State University is adjusted to the stipulations of the Agenda of the Commission for modernizing higher education of the Council of Europe, which sets five key areas for reform - increasing the number of graduates with higher education qualifications by 2020, increasing the quality and the relevance of higher education to employment needs and to the requirements of the society, a mobility for studies of better quality, integrating higher education into the "cognition triangle" (made up of education, research and innovation) and improving governance and funding.

The labour market - Institutions of higher education: brief summary.

In this context, the area labour market - educational institution has outlined a number of problems, the corollary of economic, social and educational policies:

- *The insufficient level of labour demand;*
- *Lack of qualitative and quantitative coherence* between the outputs of the system of education and of vocational training and entry into the labour market;
- *Migration;*
- *The demographic decline*, which was added to the other problems.

All these problems occur on an economic background. And although, in general, as can be seen, the gross domestic product grows over the years:



there is an increase in the budget deficit:

EXECUTION OF STATE SOCIAL INSURANCE

BUDGET, BY TYPES OF FUNDS

million lei

	2004	2005	2006	2007	2008	2009	2010	2011
Revenues – total	2947.	3696.	4347.	5157.	6362.	7581.	8416.	9088.
	9	0	7	2	8	7	0	9
Expenditures – total	2768.	3697.	4378.	5244.	6315.	7607.	8629.	9213.
	9	7	1	6	1	2	3	5
/ of which:								
Pension and compensation fund, the fund for the protection of families with children, the unemployment fund.	2561.6	3410.1	3966.5	4742.3	5701.3	6933.7	7979.8	8561.8
Social Insurance fund for employees	207.3	287.6	411.6	502.3	613.8	673.5	649.5	651.7
Excess (+), deficit (-)	179.0	-1.7	-30.4	-87.3	47.7	-25.5	-	-
							213.3	124.6

For the year 2012 the *production volume* produced by industrial enterprises of all forms of ownership records a decrease compared with previous years:

	January	to				
	December					
	2008		2009	2010	2011	2012
Industry	100,7		77,8	107	107,4	96,9

In 2012 the study *Labour Market Forecast 2013*, conducted by the National Agency for Employment, shows the following:

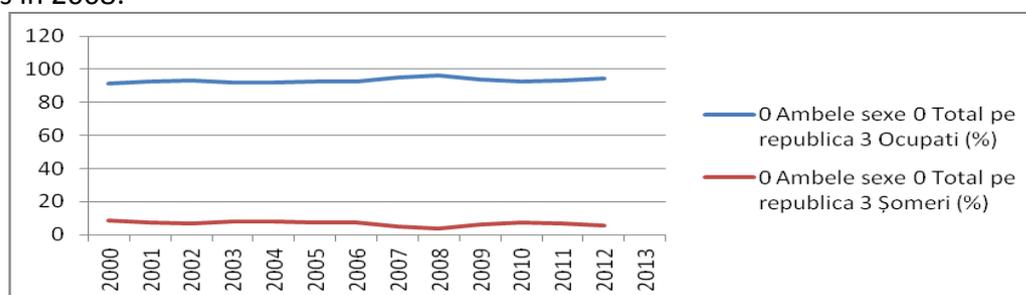
- passive investment activity: in January-September 2012 the volume of investments in long-term assets amounted to about 8.3 billion lei (current prices), with a decrease of 0.7% (in comparable prices) over the same period of 2011 (in the first quarter the decrease was 4.6%);

- increase by 2.7% in added gross value in the service sector;
- the wholesale and retail trade recorded the largest increase in added gross value - 4.2%
- in transport and communication the added gross value increased by 2.5%, in the service sector - by 2.1% and in construction services - by 1.8%;
- the gross fixed capital formation increased by 0.1% compared to January-September 2011
- the gross monthly average wage of a worker in the national economy in January-September 2012 amounted to 3426.3 lei, increasing by 9,3% compared to the same period of 2011 in nominal terms and in real terms it increased by 4,2%;
- in January-September 2012 the inflation rate amounted to 4.9%, with a decrease of 2.4 p.p. compared to the rate recorded in the same period of 2011.

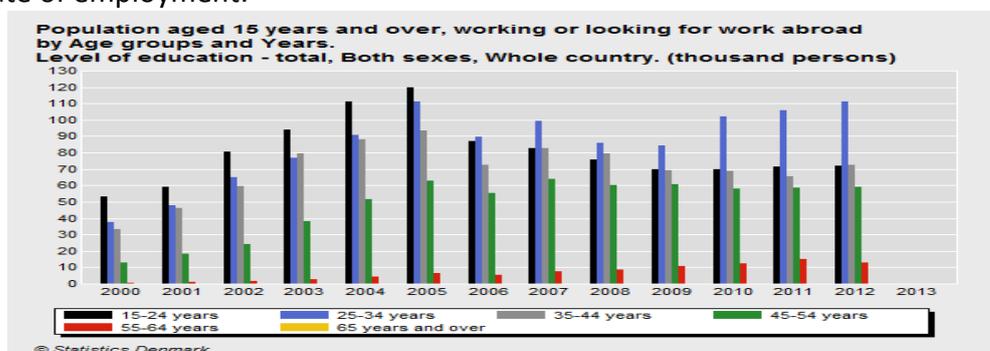
Analyzing the indicators mentioned above, the labour market in Moldova shows the following picture of the rapport active population / employed / unemployed. The data is more or less satisfactory:

	2008	2009	2010	2011	2012
Activity rate	1302,8	1265,3	1235,4	1257,5	1214,5
Employment rate	1251 (96,04%)	1184,4 (93,6%)	1143,4 (92,5%)	1173,5 (93,3%)	1146,8 (94,4%)
Unemployment rate	51,7 (3,96%)	81,0 (6,4%)	92,0 (7,5%)	84,0 (6,7%)	67,7 (5,6%)

The lowest unemployment rate and the highest rate of employment, as can be seen, comes in 2008:



In the years 2008, 2009 the emigration flow decreased. This fact should be correlated with the rate of employment:



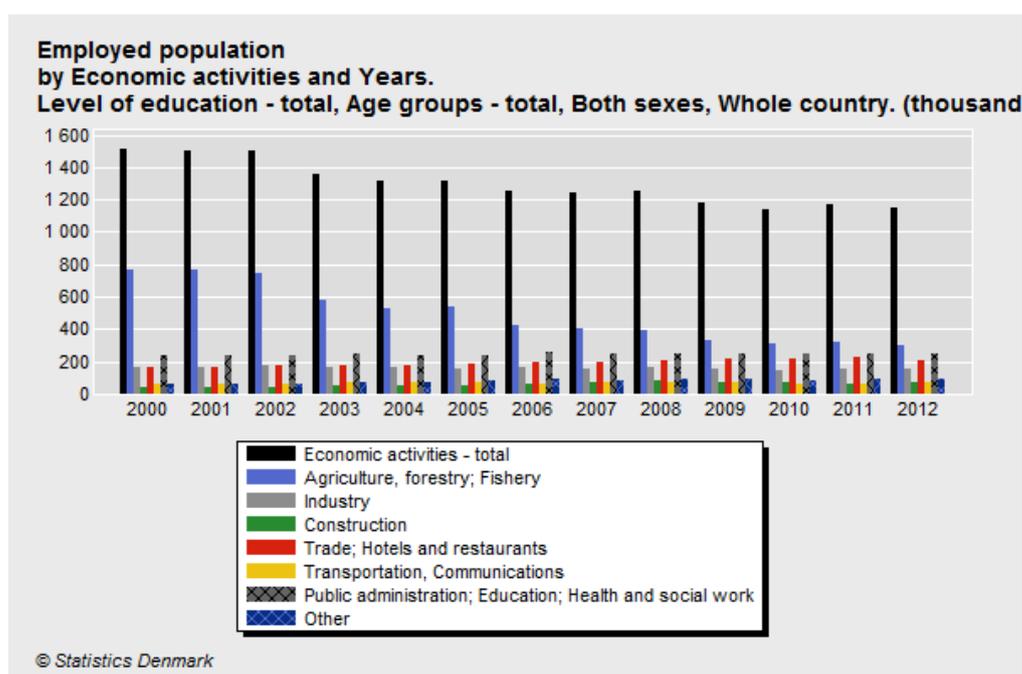
The phenomenon of emigration, together with the low birth rate and the high mortality leads to a drastic demographic decline, which has as effect the population ageing. According

to the forecast of the Institute of European Integration and Political Sciences of the Academy of Sciences of Moldova, the number of schoolchildren will decrease until 2015 as a result of lower birth rates and due to the fact that this age group is not numerous. The decrease in population will affect the labour market, because the number of the young people who come on the labour market and of the people of working age will be decreasing.

However, we should point out that although the number of students decreases and the requirements of the labour market, too, the number of higher education institutions increases or remains constant:

Higher education institutions					
		2008/09	2009/10	2010/11	2011/12
Total	Institutions	31	33	33	34
	Enrolment	114865	109892	107813	103956
	Admission	29122	27075	27895	28258

According to the National Bureau of Statistics, the largest share of employment is the employment in services, agriculture, hunting and fishing:



Meanwhile, one can notice that in these areas the number of people with higher education is the smallest. This happens either because the given fields do not require highly skilled specialists, or because universities do not take into consideration the real needs of the labour market:

Graduates from higher education institutions by Subject groups, Years and Cycles						
	2008	2009	2010		2011	
	First cycle Licentiate	First cycle Licentiate	First cycle Licentiate	Second cycle	First cycle Licentiate	Second cycle

				Master		Master
Education science	1021	2889	3100	322	3535	602
Arts	451	314	340	58	368	65
Humanities	2641	1281	848	321	778	298
Political science	1200	730	612	286	344	174
Social sciences	872	502	391	166	431	180
Social service	572	602	511	56	562	73
Communication science	497	390	384	72	333	84
Economic science	11315	9014	7319	1828	6185	1645
Law	4221	4026	3737	706	3013	822
Natural science	673	571	374	123	435	139
Exact science	1347	761	517	167	647	175
Engineering and related activities	1761	1995	1951	178	2116	271
Manufacturing and processing	515	604	598	39	632	101
Chemical technology and biotechnology	136	88	120	24	122	19
Architecture and building	463	755	825	26	879	178
Agricultural science	278	274	287	32	337	42
Veterinary medicine	91	94	10	0	0	47
Public services	637	682	797	59	639	69
Physical training and sports	267	273	224	45	280	79
Transport service	0	0	0	0	26	0
Environment protection	..	18	0	22	15	19
Security services	12	94	229	6	287	18
Public services	105	92	90	0	85	0

In the employment rate of the working age population for the past 5 years there is a predominant employment of people aged 25-54:

		Total				
	Years	2008	2009	2010	2011	2012
1	15-24 years	124,3	121,3	117,8	120	106,6
2	25-34 years	254,2	244	275,8	281,7	285,4
3	35-44 years	308,1	288,8	262,8	274,1	268,4
4	45-54 years	354,6	339,5	311,1	311,8	298,1
5	55-64 years	169,2	163	153,4	158,9	164,3
6	65 years and over	40,7	27,8	22,5	27,1	23,9

For 2012 the employment rate of working age population (aged 15-64) was 45.5%, with higher values for males 46.7% versus 44.4% for women, respectively for people in urban areas 48.2% versus 43.6% for people in rural areas. 29.3% of young people (aged 15-29) were employed and 45.3% of older people (aged 55-64). The number of people employed according to their qualification indicates a higher rate of employment of people with higher

education and with secondary professional education:

	2005	2006	2007	2008	2009	2010	2011	2012
Higher	223.8	260.5	247.4	255.7	259.1	262.8	278.3	285.7
Secondary specialized	194.3	214.2	211.3	206.3	193.7	180.2	193.6	185.5
Secondary professional	331.2	294.2	308.6	319	308.4	277.2	270.5	258.9
Secondary school	294.9	250.6	253.6	252.3	234.7	236.8	233.2	216.9
Gymnasium	235	208.9	205.4	203	177.1	178.1	189	182.1
Primary or no education	39.5	28.8	20.9	14.8	11.3	8.3	8.9	17.7

It should be mentioned that the migration rate of the people with higher education is considerably lower than that of people without education or with pre-university studies:

		Total				
		2008	2009	2010	2011	2012
1	Higher	29,4	31,5	33,3	33,6	34,1
2	Secondary specialized	38,4	39,3	40,7	40,3	39,8
3	Secondary professional	89,1	83,6	79,5	78,3	86,8
4	Secondary school	85,1	73,7	79,4	82,2	79,7
5	Gymnasium	66,1	65	76,2	80,9	85,5
6	Primary or no education	1,7	1,8	1,9	1,6	2,4

Meanwhile, the National Agency for Employment (NAE) notes that „the number of vacancies registered during 11 months of 2012 amounted to 33,500 job places. This number increased by 24.8% compared to the year 2011. The approximate number of vacancies recorded till the end of the year will constitute 36,500 job places. Of all the job places, 79% are intended for workers and only 21% vacancies are for people with secondary specialized education and with higher education".

According to NAE specialists, „one of the factors that make it difficult to fill the vacancies in a short period of time is the low qualification level of potential employees. Of the total number of the unemployed, registered on 01.12.2012, 40% are people with primary and secondary education, 20% - people with high school education and general secondary education, 22% - people with secondary vocational education, 10 % - people with higher education and 8% - people with specialized secondary education. Hence, the educational level of people looking for a job is reduced. Fewer people with a high educational level apply to the employment agency to find a job. Of the unemployed with higher education 40% are placed in employment, while of those with primary and secondary education - 17% and 25% respectively".

The biggest problem, as existing research shows, is the great difference between the professional knowledge possessed and the knowledge required by the organization: 69% of employers and 43.5% of employees pointed out this deficiency. This percentage indicates the lack of correlation between the quality demanded by the labour market and the quality

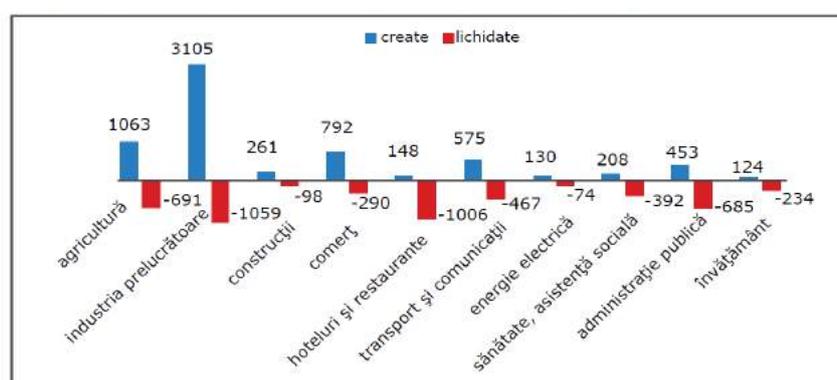
offered by educational institutions. Employers evaluated the training programs in the following way:

Mark	1	2	3	4	5	6	7	8	9	10
%	2	6	8	16	22	16	10	10	6	4

The survey *Young People Entering the labour Market* conducted by the National Bureau of Statistics shows the following deficiencies that young people have while integrating into the labour market:

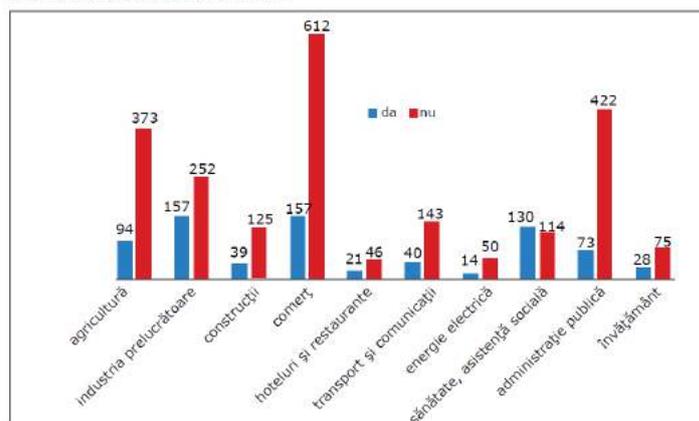
- the percentage of people who had difficulty in their first job was 27%;
- of the young people who faced difficulties, every third had higher education level;
- the most widespread difficulty (64.2%) was the lack of practical skills;
- more than 22% of people said that they had insufficient training or their training did not meet the requirements or that they had limited opportunities for professional development and promotion. More than half of all the people who had limited opportunities for professional development and promotion were people with higher education;
- for 40% the transition from education to employment has been more than 3 months;
- among the young people who have faced difficulties, every third had higher education level. The most common difficulty (64.2%) was the lack of practical skills;
- 8% of all young people combined studies with having a job. For every fifth young person the main reason for it was either to earn pocket money or to have work experience.

From the survey conducted by the NAE with 3326 economic agents to forecast the labour market for 2013, we can deduce the following picture of the possibilities of increasing the number of jobs in 2013-2015:



Amid the professional deficit from 2012:

Graficul 14. Deficitul de forță de muncă în cadrul unităților economice în ultimele 12 luni în funcție de domeniul de activitate



The profession barometer for 2013, conducted by the NAE, predicts the following employment opportunities:

High chances of employment	<p>specialists: nurse, medical assistant, pharmacist, electronics engineer, manager, energetician, programmer, trade agent, engineer-designer</p> <p>workers: seamstress, tailor, cook, baker, cashier, salesperson, waiter-barman, assembler, strand binder, cable binder and wirebinder, electrical repair locksmith, electro-gaso-welder, locksmith for installing sanitary equipment, trolley driver, cleaning women in kindergarten</p>
Balance	<p>specialists: accountant, teacher, engineer, technological engineer, mechanical engineering, industrial civil construction engineer, translator, doctor, technician, kindergarten teacher, social worker</p> <p>workers: car mechanic, computer operator, mechanic for metal construction assembly, driver, plasterer-painter, mason, carpenter, blacksmith, secretary, manicurist, barber/hairdresser</p>
Low chances of employment	<p>specialists: jurist, economist, biologist, agronomist, zootechnician, veterinary surgeon, psychologist, personal service inspector, chemist, clerk, electrocommunication engineer</p> <p>workers: telecommunication electromechanic, telecommunication electrician, telephonist, telegraphist, electronic device fitter, radiomecanic for the maintenance and repair of radios and television sets, tractor driver, turner</p>

The analysis of university entrance plans (in particular, at Alecu Russo Balti State University) shows a lack of correlation between the labour market offer and the educational offer. Thus, for the academic year 2012-2013 fewer places were offered for Languages and Literatures (translator), a speciality which is included in the second group in the chart presented above - 35 places compared to 40 places for Finance and Banking, specialty with lower chances of employment; the same number of places (50) was offered for psychology (specialty with lower chances of employment) and for informatics (high chances of employment), etc. At the same time, the analysis of the admission contest by specialty shows that graduates do not know the labour market requirements. Thus, the highest competition was at the specialties of law and economics, where on the labour market of Moldova there is supersaturation.

Challenges

The process described above influences the way Alecu Russo Balti State University functions, requiring the University to offer qualitative education for all, to improve employability and to enhance mobility. All this makes the University develop policies and actions starting from the European education policies and from those of the Government of the Republic of Moldova. In this regard the university takes into consideration the requirements imposed by the labour market; it has an aspiration to be competitive, and it tends to integrate into the European unique area of cognition and research. Through mobility programs for higher education by complying with the Mobility Strategy 2020 for the European Higher Education Area (EHEA), approved in 2012, the Lisbon Convention and other legislation and national legislation and the Directives of the European Commission, the Council of Europe and UNESCO concerning mobility and recognition, the competitiveness of the university increases. The project Education Code stipulates that the social dialogue is promoted in the national system of education as well as the development of partnerships between educational institutions and community, civil society and business.

A serious problem in the relations between the education system and the world of work is the quality of education. Unlike general education, for which the authorities have an institutionalized system of evaluation of education outputs, in the field of higher education more emphasis is placed on evaluating the process of studies than its efficiency, effectiveness and outputs. Thus, the absolute majority of the indicators in the process of evaluating and accrediting institutions of vocational training refer to facilities, providing teachers, academic achievement, dropout rate, etc. while indicators reflecting the employability rate of graduates in the labour market according to the specialties that they have do not exist. The same refers to indicators that would reflect to what extent employers are pleased with the way the graduates have been trained, and whether employers take part in the management of educational institutions.

Attracting business representatives in the university management bodies would bring a number of benefits, including:

- efficient mechanisms for interaction with the labour market, the diversity of employment fields;
- excluding the lack of alternation in leadership positions;
- support of educational institutions from former graduates, businesses, leaders, etc.;
- the involvement of business representatives in supporting students;
- the contribution of business representatives to the transparent management of the institution and to its connection with the labour market and with society in general.

The interaction between universities and the business world would also contribute to:

- increasing the interest of companies in employing human capital that would meet their expectations and requirements;
- and in reducing the emigration rate of skilled and competitive working force.

The analysis of the correlation between the labour market and university training points out a number of problems, revealing aspects that must be taken into consideration in training specialists. This will help the universities to achieve their mission, in this way creating a safer future for them. Some of these problems are:

- the need to correlate the educational offer with the labour market requirements;

- the need to develop professional competences in accordance with the requirements of employers;
- the need to offer professional counseling to graduates for correct orientation in the labour market;
- the need for university cooperation in order to train good specialists.

RATIONALE AND INTENDED RESULTS

The concept of modernisation of the educational system in the Republic of Moldova aims to make higher education a priority factor to ensure sustainable social-economic development of the country, its connection to international education development, in order to integrate into the European educational space. This concept underlies the development of the legal framework and national programs for modernisation of the educational system to the adjusted labour market.

Alecu Russo Balti State University has proposed the development of an institutional training oriented towards providing competitive human resources able to adapt to the current needs of the labour market, the establishment of a dialogue between the University and the social partners to adapt the university curriculum to the new labour market needs and standards, the adjustment to the requirements of the economy based on knowledge. The stimulation connecting students and teachers in A. Russo Balti State University in the international academic community(network) and the facilitating their participation in European and international training and the exchange of experience is a priority derived from the situation on the labour market.

The article n.11 of the Statute of the public Alecu Russo Balti State University provides four key components that define the mission of the University: education, training, research, contribution to the development of contemporary society. In the training field, Alecu Russo Balti State University aims "training in various fields of competent and responsible professionals that understand the issues related to the progress of socio-cultural, economical and technical- scientific, able to integrate free market work in a knowledge-based society." In accordance with this requirement, the relationship university - labour market is a priority and the issue described above requires bridging activities of a continuing correlation between education and labour market requirements.

Training component creates, in the same time, while positive and favorable background for the development of other components and warrants and guarantees, in the most visible and measurable way, the functionality and purpose of university studies for national economy. For these reasons, Alecu Russo Balti State University has proposed a series of activities drawn from broad issues of the relationship with the labour market, coupled with finalities:

Necessities	Activities	Expected Results	Indicators
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<p>- the necessity of correlation of labour market requirements to the educational offer</p>	<p>- labour market needs analysis in collaboration with the National Agency for Employment (NEA) and other partners and structures; - Organization of (and participation in) conferences, roundtables, debates in collaboration with representatives of the labour market; - Participation in national and international projects on insertion into the labour market;</p>	<p>- Increasing the attractiveness and competitiveness of Alecu Russo Balti State University; - Strengthening the role of Alecu Russo Balti State University as a training institution of for the national Economy.</p>	<p>- Elaborated surveys; -Conferences' materials and programs; -signed partnership agreements; -National assessment indexes; -Number of candidates for admission / admitted to the studies / their records;</p>
<p>The development of professional skills in accordance with the requirements of the employers</p>	<p>The involvement of employers in the elaboration of professional standards, of the curriculum, of the professional training (internship), in assessing graduates</p>	<p>- The elaboration of an attractive curriculum for employers and future professionals; - The development of appropriate skills taking into consideration the employers' requirements; -The external objective evaluation of training specialists;</p>	<p>- Curriculum approved by representatives of the labour market; -Cooperation agreements with the representatives of the labour market; -mixt committees, with external examination presidents of the results of undergraduate and master studies;</p>
<p>the necessity of professional counseling for graduates for their right orientation to the labour market</p>	<p>The organization of university Days , university training courses, providing professional counseling consultations</p>	<p>- Attracting candidates for studies at USARB; - Admission to studies after a proper election, in accordance with the abilities and desires of candidates;</p>	<p>- The number of students admitted to the study; - Correlation admitted candidates / graduates; - The number of employed graduates;</p>
<p>the necessity of academic cooperation</p>	<p>Academic exchange</p>	<p>-Increasing opportunities for competitive training and employment</p>	<p>Number of mobilities</p>

in order to prepare appropriate specialists		opportunities in the work field; -Promoting personal development;	
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THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The experience in developing the social partnership and cooperation with the labour market of Alecu Russo Balti State University has started in the late 90s through the opening of new specialties and exploring the labour market in order to improve the quality of specialists. During this period the University has diversified substantially the academic offer. The diversification of the academic offer, adjusting it to the requirements of the labour market has been achieved by a number of measures described below.

Technical and logistical support of European structures: a new programme „Social Work” through the Tempus project T_JEP-10012-1995 (MD) ARUB Studiengang Sozialwesen, March 1995 - March 1998; The development of professionalized courses, in order to facilitate the professional adaptability of the specialists in the economy and labour market, issuing double degrees with Clermont-Ferrand University, France, in the project „Modernisation and development of professional courses” "No.: 144920-TEMPUS-2008-FR-JPCR.

Initiative by industrial partners. Thus, in 2001-2002 the, “Selectia” Balti Institute for Field Crops Research, practically had no young specialists, most scholars were of retirement age, started to train future specialists of the nominated institution. There had been started two programmes of study at the University – “Agro-ecology” and “Agronomy”. The study programmes took into account the peculiarities of the training specialists for the Institute. About 50-55% of the study subjects had been currently lectured by the members of this institution. All types of internships, most of the laboratory work was conducted in the labs and on land of the Research Institute. In a few years this institution had become competitive, having young new employees. They already have a few followers who do their PhD studies.

In 2011 the German company “Draxlmaier Automotive” Ltd, registered in Balti Economic Free Zone, notifying severe shortage of middle-level managers (heads of departments, shifts, etc.) Their management had addressed the management of the Alecu Russo Balti State University a proposal to train specialists in engineering and management in automobiles. After a few months’ work, a programme study had been developed for “Engineering and Management (in vehicles)” together with experts from several universities in Germany, taking into account especially the internships and trainings of young specialists. A number of courses are even promoted by a group of academics from Germany, representatives of the industry.

Initiative of the profile departments, the managers and / or employees. Moldova's accession in 2005 to the variation of the Bologna study programs at the three levels of training of specialists with higher education: BA, MA, PhD. Managers of university subdivisions explored market requirements and proposed new qualifications and specialization.

Specification of the Government priority areas of training specialists with higher education (according to the nomenclature of occupations).

Requests / applications received through feedback that we have through the students’

following practices in diverse institutions and organizations and initiatives, proposals they come to practice summarizing conferences.

Set of student-feedback processes during current and final assessment. At the end of each semester the quality management department accounts for students' opinions about the training and requests suggestions for improvement. In addition to graduation all students complete an online questionnaire containing exhaustive information about their personal training experience at the University. Subsequently, processed quantities and qualitative survey results and the academic community. Since these results are taken into account in developing policies to modernize the training curricula.

Analysis of the beneficiary's opinions refresher courses and / or training provided by the University which is the country's labour market. The diversification of education and strengthening the quality of university graduates through the development of social partnership and cooperation with labour market influenced the decision-making process involving multiple stakeholders. The development of social partnership and cooperation with the labour market was and is an ongoing process action focused on the changing needs.

1 Necessity: a correlation between labour market requirements and the educational offer

1.1.Activities:

1.1.1. Labour market needs analysis in collaboration with National Agency for Employment and other structures.

Results of the studies focused on identifying the needs of the labour market have been published in:

- Proceedings of the International Scientific Conference: Competence based Approach of the university training: problems, solutions, prospects, performed on 8 October 2010;
- Cornea, S., L. Trinca, Sainenco A., and others: Higher education: supply and demand, Cahul, 2011 ISBN 978-9975-914-64-2;
- Integration of university graduates in the labour market: national and international aspects. International scientific-practical conference materials, Balti, Balti University Press, 2012;
- Final volume of project materials "The development of higher education by improving social partnership", European programme Tempus, Faculty of Philology;
- Final volume of project materials, "Education in social work professionalization", of the European programme Tempus, faculty of Psychology and Social Work;
- Final volume of project materials, "Modernisation and development of professional courses" European programme Tempus, Department of Economics;
- Final volume of project materials, "Educational network of the teachers from East-West", European programme tempus, Faculty of Exact Science.

1.1.2 Organizing (and participation in) conferences, roundtables, debates in collaboration with representatives of the labour market has resulted in highlighting areas of interest for labour market research, exchange of views, formulating solutions for better employability of graduates in the labour market, creating new working groups in this area, the active involvement of students etc.

Some of the events organized were the point of continue collaborative traditions, some of

them with:

- International Scientific-Practical Conference (including online participation) *Integration of Higher Education Professionals into the Labour Market: National and International Aspects*, Balti, October 21-22, 2011 (responsible: department for economy and management, department for Romanian language);
- Thematic seminar *University curriculum/school curriculum: between desideratum and praxis*, Alecu Russo Balti State University, November 10, 2011 (responsible: department for Romanian language);
- The interuniversity scientific-practical symposium, *Teaching Romanian in the conditions of current communication*, Chişinău, May 25, 2012;
- Practical Seminar *Enhancing students' creative potentials - an important aspect of child-friendly schools*, organized for Vice-directors of secondary schools from Balti in charge of organizing the academic process. Balti, April 4, 2012;
- Practical Seminar *Diagnosis – a link between the teacher's skills and pupil's activity/results in the period of updating the contents of instruction*, organized for Vice-directors of secondary schools and of Lyceums from Balti in charge of organizing the academic process. Balti, February 16, 2012;
- Seminar *Priority trends in the activity of educational institutions*, organized for Vice-directors of secondary schools and of Lyceums from Balti in charge of organizing the academic process, Balti, February 12, 2012.
- International Scientific-Practical Conference *Competitiveness of human capital on the labour market under the conditions of regional development and European integration*, Balti, May 22-23, 2013 ((responsible: department for Romanian language, lab for scientific and didactic research in economy, department for socio-humanities).

1.1.3. Participation in national and international projects on insertion into the labour market has resulted in the type and theme of the project, taking best practices from European and Eastern Partnership countries, implementation of already established practices in partner countries, highlighting weaknesses and areas requiring a more intense activity.

For example, international projects involving European program Tempus at the University, with the purpose of having enhanced capacity to develop social partnership and cooperation with the labour market:

- 159338-TEMPUS-1-2009-1-LV-TEMPUS-SMHES Development of higher education by improving social partnership (coordinator, dr. Lilia Trinca, Faculty of Philology);
- TEMPUS ETF – JP-00471-2008 „Professionalization of education in social work” Coordinator general: Gip Fipag — Public Interest Group Training and Employability of the Academy of Grenoble, France (coordinator, dr. Valentina Pritcan, Faculty of psychology and Social Work);
- SCM-T005B05-2005 „The Development of a Quality Assurance System within selected Universities in Moldova” that has as objective to develop the quality management system in university and developing the handbook of quality management (coordinator, dr. Valerii Cabac, Faculty of Exact science);
- Develop professionalized courses to facilitate the adaptability of the specialists in the economy and labour market, and release of double degrees with the University Clermont-Ferrand, France in the project, modernisation and development of professional courses" no. Registration: 144920-TEMPUS-2008-FR-JPCR coordinator:

University of Auvergne Clermont-1 (coordinator, Dr. N. Branaşco, Faculty of Economics);

- 145035-TEMPUS-1-2008-1-LT-TEMPUS-JPTHN „Educational network of the teachers from East-West”, (coordinator, dr. Valerii Cabac, Faculty of Exact Science).

National projects developed and implemented by University collaborators, with the purpose of having enhanced capacity to develop social partnership and cooperation with the labour market:

- 11.817.08.68A Research of the potential impact of the development strategy of professional specialists on increasing the competitiveness of enterprises in the globalized, coordinator Irina Movila, Faculty of Economics;
- 12.840.18.04A Strategic human capital management competitiveness in the labour market of Moldova in terms of regional development in the state program, coordinator Irina Movila, Faculty of Economics and Igor Cojocaru, Faculty of Psychology and Social Work.

Currently, Alecu Russo Balti State University, launches a new project implementation in the field of Joint Business Support Centre - Tool for Fostering development of entrepreneurship in Ro-Ua-Md cross-border area (Jo.BS Center)” financed by Joint operational Programme Romania-Ukraine-Republic of Moldova 2007-2013.

1.1.4.Other relevant results:

Agreements:

- The agreement between Alecu Russo Balti State University and the Municipal Department of Education, Youth and Sport, Balti;
- The agreement between the Romanian Language Chair of the Faculty of Philology of Alecu Russo Balti State University and the Municipal Department of Education, Youth and Sport, Balti;
- The agreement between Alecu Russo Balti State University and the Employment Agency from Balti, which sets the framework for organizing the collaboration of the parties in counselling and professional guidance, specifying the rights and obligations of the parties in accordance with the requirements in force;
- The agreement between Alecu Russo Balti State University and the LOGO e.V. from Germany (regarding internship in agriculture);
- The agreement between Alecu Russo Balti State University and the Balti Branch of the Chamber of Commerce and Industry of the Republic of Moldova;
- The agreement between Alecu Russo Balti State University and the State Agency for Intellectual Property of the Republic of Moldova;
- The agreement between Alecu Russo Balti State University and the Agency for Development Nord, Balti;
- The agreement between Alecu Russo Balti State University and the an the German company “Draexlmaier Automotive”;
- The agreement between Alecu Russo Balti State University and the AO “Pro cooperarea Regională”;
- The agreement between Alecu Russo Balti State University and instituțiile related to social work in Balti etc.

2. Necessities: need to develop professional skills in accordance with the requirements of employers

2.2. Activities:

2.1.1. Involving employers in setting professional standards

The occupational standard for the occupation *Teacher of Romanian Language and Literature* has been worked out within employees (directors, representatives from Educational Directorate of the city, teachers in the field); The elaboration of the standard underwent several stages: analysing the labour market (September-October 2010); analysing the curriculum for Romanian Language and Literature and Russian (September-October 2010); documenting and getting a moderator's certificate in developing occupational standards by taking part in the training organized by ISMA, Letonia (May 1-14 2011); organizing a seminar with representatives of the labour market in order to analyse the occupational area (May 25, 2011); evaluating and completing the standard (June-July 2011); editing the standard (August 2011); submitting and approving the standard at the conference *Integration of Higher Education Professionals into the Labour Market: National and International Aspects*, section Educational/cultural management: professional standards and the labour market (October 21-22, 2011).

2.1.2. Involving employers in developing / analyzing and modifying the study plans

In order to study the trends in the labour market and the possibilities of social partners to get involved in improving specialist training, a working group was created. Following the discussions of the research results, it was decided to elaborate two modules *The Management of Educational Institutions and Culture Management* that would be included in study plans of the master studies. In such a way the changes were made at the Level II Master, specialty Romanian language and literature: Temporal and Space Varieties (Romanian / Russian) și Level II Master, specialty *Modern didactics of Philological Disciplines (Romanian / Russian)*.

The module *The Management of Educational Institutions* (Theoretic Basis of Educational Management; The Management of Human Resources in Educational Organizations; Communication Management; Epistemology and Methodology of Linguistic Research; The Theory of Language in Pre-university Education) and the module *Culture Management* (Theoretical Basis of Management; Project Management; Intercultural Communication; Linguistic Culture Studies; Management of Culture Forms) – have been introduced into the educational process in the academic year 2011-2012 within the Master of Philology programme.

To study the situation on the social work situation during June 25-July 25, 2009 a sociological research on a sample of 566 employers and employees in the field took place. The study objectives were:

- identify main specializations / directions, currently existent in Moldova in social work;
- identify the difficulties encountered by social workers during their professional pursuit;
- identification and validation of new programmes / departments of social work required by the labour market, the skills required to carry out these programmes;
- knowledge of the programmes / departments activity that requires some changes in curricula;
- analysis of opinions of specialists in social work on the development of social services and university training and education.

Subsequently, the employers have been involved in the design, analysis and modification of curricula. Similar practices were reported in several departments of the university. For example, the programme curriculum „Engineering and Management (auto transport)” for opening a new programme at the Faculty of Exact Science of the University of 1 September 2012 was developed in partnership with Draexlmaier Automotive and professors-experts of similar faculties in Germany.

2.1.3. Involving employers in professional trainings

- The Framework Plan for Higher Education in the Republic of Moldova, internships are "compulsory part of the initial training program aimed at obtaining specific generic skills in a field training / specialization" and "is organized under special programs / contracts entered into in this regard. They are promoted, regardless of type, at Alecu Russo Balti State University with the direct representatives of the labour market: pre-university education, industry, agriculture, social services, etc.
- Courses held by employers;
- Coordination of scientific activity by employers of students.

2.1.4. Involving employers in student assessment

-According to the Regulation on the organization of higher education undergraduate cycle and the Regulation on the organization of higher education master cycle II, the composition of the undergraduate and master necessarily include a representative of the labour market or an external person. Thus, in the examination commission for all specialties, the president is a person outside of the university and in master's examination committees, vice president / representative of the labour market.

3. Necessity: graduates need professional counseling to correct orientation to the labour market

3.1. Activities

3.1.1. Organizing Open Days at the Alecu Russo Balti State University;

3.1.2. Visiting high schools in Moldova with presentations and discussions in formal and informal meetings;

3.1.3. Develop informational brochures;

3.1.4. Involving people / organizations, as a “resource” to be involved in dissemination;

3.1.5. Establishing communities of practice (formal - professional organizations - or informal);

3.1.6. Career Guidance: involvement in processes aimed at self-knowledge, career paths operating assistance, assistance with career decision making, career advice for building plan.

3.1.7. Elements of marketing personal / ego-marketing: how to write a resume, how to conceive a letter of motivation / intention, how to conceive a thank you letter, how to present yourself in a selection interview.

3.1.4. Assimilation job search techniques with the use of the Internet in search of a job entry in the database by filling specific.

4. Necessity: university cooperation regarding adequate preparation of the specialists

4.1. Activities:

4.1.1. Academic Staff mobility.

Teachers' mobility is achieved in accordance with the Regulation regarding the Didactic activity in higher education, which is developed under the provisions of Education Law no.

547 of 21.07.1995, Republic of Moldova commitments following the accession to Bologna Process, including the provisions of the Communiqué Leuven / Louvain-la-Neuve, 2020 Mobility Strategy for the European Higher Education Area (EHEA), approved in 2012, the Lisbon Convention and other regulations and national legislation and directives of the European Commission, Council of Europe and UNESCO in mobility and recognition.

To facilitate the academic staff mobility, Alecu Russo Balti State University has signed over 60 agreements / conventions between universities, enterprises and organizations in the country and abroad. Additionally we have developed and have achieved mobility projects, and have facilitated getting individual contracts. Now, employees can get sufficient university mobility scholarships through international programs like TEMPUS, ERASMUS-MUNDUS, AUF, UNESCO. DAAD, Fulbright EDMUND S. Muskie, CEEPUS FP7. In 2011, 31 university teachers have benefited from mobilities and in 2012, 48 teachers.

4.1.2. Student Mobility

In the Green Book promoting educational mobility of young people is mentioned that "Learning mobility or transnational mobility for the purpose of acquisition of new skills is one of the fundamental ways in which individuals, particularly young people, increase their employability and their personal development. Studies confirm that learning mobility improves the quality of human capital, because students get access to new knowledge, they develop their language skills and enlarge their cultural horizons. Additionally, employers recognize and appreciate these benefits. Europeans who, being young, during the training period showed mobility are likely to be mobile and later in professional activity.

Now students of Alecu Russo Balti State University may benefit from sufficient mobility scholarships through international programs ERASMUS-MUNDUS (currently we are partners in 8 projects), AUF, UNESCO, DAAD, CEEPUS. In 2011, 80 students have benefited from mobility and in 2012, 54 university students have benefited from mobility.

RESOURCES REQUIRED AND USED

Creating / institutionalizing good practices requires investments. They are of two types:

Tangible resources – their material consistency and value can be easily evaluated.

Intangible resources - immaterial and irretrievable if used efficiently.

The resources used in order to develop the social partnership and cooperation with the labour market of Alecu Russo Balti State University can be classified and characterized according to several parameters:

Tangible resources:

- a) human resources - staff and employees involved according to the type of activity (organizing events, developing plans and standards, mobility, etc.), to the position (recipient / organizer), to the consumer etc.
- b) financial resources – capital and funds from international and national projects;
- c) material resources - workspaces, equipment and consumables;
- d) investments from the employer - utilities, professional services.

Intangible resources:

- a) relevant information for decision making;

- b) recommendations for the development of good practices and partnerships;
- c) the time allocated for administrating the internal resources of the University and the relations with social partners and labour market.

FACILITATING FACTORS

The practices described above were performed under the action of several facilitating objective factors of national and local level: changes in the labour market and the transition of universities to self-financing imposed awareness of the need to achieve educational progress according to the needs of the labour market and according to our need/desire to maintain the reputation of a higher education institution at all levels of employees. In this way, the human factor was prepared and was decisive in achieving good practices.

The initiative of these practices was from top to bottom (from the managerial team of the university: the concrete case – adjusting study plans) and bottom up (from teachers and students), through direct professional or human collaboration with the labour market (concrete case: permanent adjustment of the curricular content based on feed-backs and analyzes of situations) and through inviting / working together with experts (technical support in international projects, inviting teachers, experts). First of all, the fact that all the parties involved were open to cooperate, facilitated the successful implementation. In addition to this, we would like to point out the relative freedom that the universities from Moldova have in decision-making; the availability for collaboration shown by some of the employers (especially by the German company „Draexlmaier Automotive”, the Municipal Department of Education, Youth and Sports, the Municipal Department of Social Assistance and Family Protection, the Research Institute of Field Crops „Selectia” from Balti, the Agency for Development North etc.), the overlapping of the period of the need to correlate with the labour market and with the academic work in national and international projects of research and of mobility.

CHALLENGES AND OBSTACLES

The challenges and difficulties overcome by Alecu Russo Balti State University on its way to develop social partnership and cooperation with the labour market concern:

The human factor:

- resistance to change from the employees of the university;
- employers' skepticism;
- lack of tradition in collaboration with communitary structures and enterprises;
- stereotypes concerning career development.

Financial factor: poor internal funds (or lack thereof) to investigate the labour market.

Knowledge and experience factor: the lack of a methodology for investigating the labour market and of personnel trained in this regard.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

The academic approach was traditionally focused on two dimensions: education and research. The real needs of the society were, in the majority of cases, ignored. Instead, universities followed the traditions formed in the Soviet period. This fact was reflected in the traditional nomenclature of specialties, in syllabuses and curricula. The changes, if they

actually occurred, were sporadic, undirected, being conditioned by a good sense and by an analysis of the needs. In this regard, the activities which have been carried out lately at Alecu Russo Balti State University may be considered innovative in the specific university context.

The innovative dimension of the good practice is reflected additionally in the tendencies of the University's employees to promote, "*The Triangle of Cognition*": *education, research and innovation* developing institutional models adjusted to the needs of a changing society. We can affirm today that the university has trained experts on how to project, select and teach educational content focused on the correlation between theory and practice, interdisciplinary learning, learning by example, meta-learning, dual learning. Many managers and employees of the university experienced real mechanisms of partnership development between the university and private and public sector. This fact has a benefic impact on the elaboration of professional standards, on the constant updating of the process of specialists' training, creating, in this way, real opportunities that would provide effective and innovative solutions for competitive specialist training.

The "innovative" products of the above mentioned practice are the professional standards, the profession sheets, the updated curriculum, the mobilities, the constant evaluations from employers and students, from the beneficiaries of continuing education courses, understanding university leadership and management as an essential element that would enhance and optimize specialist training.

SUSTAINABILITY OF THE GOOD PRACTICE

Sustainability of the good practice is ensured by the mission of Alecu Russo Balti State University, by its transition to autonomy, by the need to survive in the market economy, by the increasing academic competition caused by demographic problems (decrease of birth rate) and by a high rate of emigration.

In addition, sustainability is ensured by:

- Long term decisions taken by the University Senate and Faculty Councils, regarding the required cooperation with the employer from the labour market;
- Study plans that stipulate compulsory practices of various kinds in the labour market;
- Ongoing national and international projects related to the specified field;
- Cooperation agreements signed with social partners, through which Alecu Russo Balti State University has assumed concrete obligations of long-term cooperation with the labour market;
- Students' motivation to develop skills that would assure their placement on the labour market;
- Employers' interest to work with Alecu Russo Balti State University in order to prepare competent professionals; support from ministries.

TRANSFERABILITY OF THE GOOD PRACTICE

The development of social partnership and cooperation with the labour market within Alecu Russo Balti State University was done in different ways and can be summarized as follows:

Horizontal: from one department to another, from one faculty to another, depending on the linear communication between managers and employees:

From top to bottom: through the Regulation stipulations and through directions given by

senior managers;

Oblique: through the collaboration between managers and employees of different levels and from different structures;

From the bottom up: through sharing the experiences of lower-level managers and employees to higher-level ones.

This is what we would recommend higher education institutions wishing to transfer our good practice:

- the analysis and use of current educational policies for higher education;
- the elaboration of a strategic plan for the development of social partnership and cooperation with the labour market and the elaboration of a concrete action plan;
- providing life-long training of university employees;
- inviting the representatives of the labour market to the activities of the university: open-door days, public lectures, implementation of common research projects, conferences, round table talks;
- encouraging the social partnership activities regardless of the manifestation form (including volunteering);
- working with the media.

LESSONS LEARNT AND RECOMMENDATIONS

A modern and competitive university badly needs transparency and openness, inclusiveness, participative approach, leadership and clear references, a well-defined international perspective, an innovative and interdisciplinary approach to problems, constant communication, creating consolidated environments for research and showing respect to students. The development of social partnership and cooperation with the labour market is essential in achieving these goals.

What worked very well in the experience of our university?

- manifestation of openness for change;
- understanding the importance of social partnership and of the cooperation with the labour market in order to train good specialists and to become a competitive institution;
- the location of the university in the free economic zone facilitates the cooperation with international companies;
- partnership requests received from the employer;
- benefiting from international technical and logistical support;
- the presence of various service networks in the community.

Things we would do differently next time:

- developing a coherent policy in this field from the very beginning;
- allocating more hours for internships and organizing meetings for students in their future professional field;
- involving students in the decision-making process;
- reducing the discrepancies between universities and industry by overtaking successful practices.

Recommendations to other institutions:

- get rid of stereotypes about career development;
- increase competitive human resources (number, level of skills, level of responsibility and commitment);
- develop coherent policies in this field;
- analyze the labour market needs in collaboration with the National Agency for Employment and with other partners and structures;
- correlate the labour market demands with the educational offer provided.

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21. University Technopark: the Way from Science to Practice

Vitebsk State Technological University, Belarus

EXECUTIVE SUMMARY

The case study is devoted to creation of the subject of innovative infrastructure (a technopark) on the basis of Vitebsk State Technological University (VTSU). In the article, preconditions of creation of the technopark are considered: political, social and economic, technology and cultural factors of macro-environment are described, features of development of an education system and the changes happening in higher education institutions in the period of reforming of economy of the Republic of Belarus are considered.

The process of creation and development of the science and technology park of VTSU according to the purposes and tasks which were set by the Government Program of Innovative Development and the Ministry of Education of the Republic of Belarus is described. The factors accompanying development of the science and technology park on the basis of VTSU, and also external and internal problems which were required to be overcome are considered. The resource potential used in the course of introduction of innovative practice of creation of the technopark is studied.

The acquired lessons are described, recommendations about further development of the technopark are made. Questions of sustainability and transferability of good practice of the technopark activities are taken up.

BACKGROUND INFORMATION

VTSU (<http://vstu.by>) in an entire academic-scientific-production complex, which trains higher education specialists for light industry and other branches of economy, prepares highly qualified scientific personnel, provides qualification improvement and employees retraining on different spheres, implements fundamental and applied scientific research on broad aspects, manufactures light industry products, develops international co-operation with higher educational establishments and enterprises. The University provides the high level of professional training of specialists.

VTSU consists of 7 faculties: Faculty of Design and Technology, Faculty of Artistic Design and Technology, Mechanical-Technological Faculty, Faculty of Economics, Correspondence Faculty, Faculty of advanced training and retraining of personnel, Faculty of pre-college training and career guidance, training of specialists is carried out on 26 departments. Today the total number of students taking full-time and part-time courses is about 8000. Students are trained in 19 specialities.

The University has formed a high-qualified teaching staff (over 320 people). It consists of 15 Doctors of Sciences, 14 Professors, 144 Candidates of Sciences, 119 Associate Professors. The post-graduate course trains highly skilled staff in 6 specialities. Since 1993 the Council for defending thesis has been working successfully.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Weak links between education, research and innovation

Weak knowledge-transfer infrastructure at the higher education institutions and lack of entrepreneurial, creative and innovation skills

Reforms in the national legislation leading to major changes at institutional level

THE WIDER CONTEXT

In Belarus during the last 15 years, the strategy of national policy of science and innovations as key factors of socio-economic development was defined rather clearly. In terms of state autonomy, limited raw materials and energy resources, the increase of the national economy effectiveness is estimated on the basis of the development of manufacturing industries and service sector, for the maintenance of which in a competitive position the adequate level of scientific and technological potential development is necessary. Its task is to produce new knowledge and to use the achievements of domestic and world science and technology. Thus, the policy of the Belarusian state is focused on the development of intellectual resources.

Scientific and technical resources currently available in the country - the accumulated knowledge, scientific personnel, material and technical base and system of financial support of science – are estimated as rather starting position for further development, which essentially depends on the innovation activity of the production sector – the main consumer of R&D results. Belarusian science remains an important factor of the country's economy formation during transition period. The development of science intensive sectors, the increased export opportunities for individual sectors and industries, increased product quality, scientific support of agriculture, health and ecology are achieved through the direct participation of science.

The main priorities of the Republic of Belarus are to maintain the economic growth rate and to ensure innovative development of the country's economy and its competitive advantages and growth sources, which primarily include the intellectual potential of the nation. The formation and growth of the country's intellectual potential is impossible without the improvement of the national education system that must meet priorities for sustainable socio-economic development and be able to actively influence economic competitiveness.

Today Belarusian science is putting forward major innovative ideas arising from fundamentally new knowledge. The use of newly acquired knowledge in the real sector of economy is impossible without an effective expert system for the evaluation of R&D results. The solution of these problems is determined by the strategy of innovative development of the Republic of Belarus, which notes the need to introduce an effective form of research organization based on theoretical and practical centres and development of innovation infrastructure. The main aim of transformation is to create a system of institutions necessary for the further development of market economy.

With the aim to preserve and develop human resources for the scientific-technological and

innovation complex of the country, a single mechanism to plan training scientific personnel of higher qualification has been created by the order of the government. The government is providing substantial support to talented youth. Each year, young scientists are awarded scholarships by the President of the Republic of Belarus and given grants by the Ministry of Education and the National Academy of Sciences.

The analysis of the personnel training system in the field of innovative activity in the Republic of Belarus suggests that there are a number of problems in this area that require immediate solutions. At present, the educational standards of training in innovative specialties in the Republic of Belarus are not adapted to the real demands of modern economy. There is a necessity for creating a system to forecast and plan the process of training personnel for innovative and scientific organizations of the country for the medium and long term.

Another feature of the institutional model of Belarusian science is an insignificant "presence" of higher school staff in the scientific potential of the country. The number of employees engaged in R&D in the higher education sector at the end of 2010 was 9.2% of the total number of employees engaged in R&D in the country in whole.

To solve the problem of science and production integration, theoretical and practical centres are being created in the country. First of all, they have been established in the field of medicine, agriculture and material science. This is a promising form of innovation implementation. The subordination of scientific and technical personnel's activity to single practical goals, and the comprehensive elaboration of scientific, technical and technological issues implemented within a single enterprise is the way of scientific and technical progress of the world's most advanced countries.

Belarus should maintain and develop the current level of science and production integration and avoid breaking cooperative relations of scientists and producers. To ensure collaboration of research institutions, academic departments of higher education institutions and organizations for development and manufacture of new competitive products, it is necessary to enhance the implementation of scientific and technical programs and develop proprietary science in the country.

Cooperation in the fields of science, education and technology should be concentrated in the regions and research areas of particular importance for Belarus, or where the competence of Belarusian scientists is of the highest level, or where there is an especially high potential for development. To respond adequately to the challenges of global competition, Belarus needs to implement a national strategy based on the high intellectual potential of Belarusian scientists and creation of competitive innovative products.

For this purpose, the Government of the Republic of Belarus has started the Government Program of Innovative Development of the Republic of Belarus for 2011-2015 and for the future, in which the main strategic goals and objectives are defined as follows:

- to develop science, scientific-technical and innovative activity, to develop main priority directions of innovative and investment activity;
- to improve the competitiveness of the real sector of economy;

- to increase the exports of goods, services and technologies;
- to use natural resources rationally, to protect the environment;
- to develop regions, small and medium-sized towns, districts;
- to involve small and medium-sized enterprises in the innovation process;
- to develop free economic zones;
- innovative development in the field of energy efficiency and renewable energy;
- to develop a system for informational and ideological support of the program.

The Government of the Republic of Belarus pays particular attention to the creation of an effective mechanism for legal regulation of scientific-technological and innovative activity, in which legal instruments of the government's encouragement and support of research and innovative activity should occupy a special place. The consolidation of the efforts of all participants in the educational, scientific, technological and innovation processes will provide a possibility of creating an effective national innovation system in the Republic of Belarus in the coming years which will ensure wide dissemination of knowledge and rapid pace of scientific and technological progress.

The main goals of the Government's scientific and technical policy of the Republic of Belarus are as follows (<http://www.pravo.by>):

- to ensure the economic and social development of the Republic through the effective use of the intellectual resources of society;
- to improve the scientific and scientific-technical potentials as the most important factors of socio-economic progress;
- to achieve high intellectual and cultural levels of society with the aim of improving the quality of people's life.

The main activity of the research and innovation complex of the Republic of Belarus is aimed at implementing the priorities of scientific and scientific-technological work in the Republic of Belarus (developed for every 5 years), activities of the Program of Social and Economic Development, Government Program of Innovation Development of the Republic of Belarus and other decisions of the President and Government of the Republic of Belarus.

The conditions for the functioning and development of science and innovations, a system of organization and management of R&D for a short term were created in Belarus over the transformation period. Regular work to optimize the system of management of scientific, technological and innovation activity and its structure and to improve the mechanisms and conditions of the development of scientific and technical sphere is being conducted. VSTU is an industrial institution specializing in training specialists for light industry.

Currently industrial science in Belarus is developing in two main ways - through the creation of their own scientific structures at large enterprises and the transformation of the former industrial institutions into educational, scientific and industrial complexes. The advantage of industrial science lies in the responsibility of designers for the topicality and implementation of their research results. International and domestic experience demonstrates the effectiveness of an integrated approach in the implementation of high-tech scientific research, in which the subject of innovation infrastructure provides the whole range of activities – from a scientific development to its materialization and

commercialization.

Over the period from 1990 to 2010, the share of light industry in the industrial output of Belarus decreased from 17.2% (second after machine-building and metal-working industry in 1990) to 3.9% (eighth among ten major industries in 2010).

Table – Change of the Branch Structure in the Industrial Production of the Republic of Belarus

Branch of industry	1990	1995	2000	2009	2010
Electric power	2.6	13.8	7.1	6.8	7.1
Fuel	4.6	4.3	16.2	19.4	17.6
Ferrous metallurgy	0.9	2.4	2.9	3.2	3.7
Chemical and petrochemical	9	14.3	12.5	12.1	13.1
Machine-building and metalworking	34.2	23.3	20.5	21.5	22
Logging, woodworking, pulp and paper	4.4	5.3	5	4.1	4.2
Building materials	3.7	5.1	3.4	5.5	5.4
Light	17.2	8	8.4	4	3.9
Food	14.9	17	17.3	17.9	17.9
Flour and cereals, and mixed feed	5.7	4.1	3.9	3.2	3

Increased competition from Asian producers as well as low competitiveness of Belarusian light industry products in the foreign market are the main reasons for the decline in the industry.

There is a low level of innovation activity at light industry enterprises of Belarus. Thus, the share of enterprises engaged in technological innovation in the total output of textile and sewing industry enterprises was 8.1% in 2009 and 8.9% in 2010, and for enterprises producing leather, leather articles and footwear it was 13 % in 2010 and there were no technological innovations in this sub-sector in 2009.

Vitebsk region has traditionally been considered one of the main centres of light industry in the country. Vitebsk region leads in the nationwide production of carpets (90%) and footwear (40%), and also retains a significant share in the manufacture of hosiery and fabrics.

Table - Shares of the Regions and Minsk City in the National Output of Selected Industrial Products in 2010 (percent of the total national output)

	Region						
	Brest	Vitebsk	Gomel	Grodno	Minsk City	Minsk	Mogilev
Fabrics except non-woven of fabric type	9.2	10.9	54.7	1	3.2	0.9	20.1
Carpets and carpet	3.8	95.6	-	-	-	0.6	-

articles							
Hosiery	20.4	19.1	3.1	57.3	-	0.1	-
Footwear	5.2	42.9	10.3	13.3	16.6	2.9	8.8

Table - Shares of the Regions and Minsk City in the National Output of Selected Industrial Products in 2012 (percent of the total national output)

	Region						
	Brest	Vitebsk	Gomel	Grodno	Minsk City	Minsk	Mogilev
Fabrics except non-woven of fabric type	30.1	26.1	7.5	0.2	2.0	0.1	34.0
Carpets and carpet articles	1.4	98.1	-	-	-	0.4	0.1
Hosiery	18.6	11.0	4.0	66.2	-	0.2	-
Footwear	5.0	38.4	18.5	11.5	15.9	2.5	8.2

In Belarus, the largest light industry enterprises are part of the Concern "Bellegprom". The concern was founded in 1992 on the basis of the Ministry of Light Industry of the Belarusian Soviet Socialist Republic. Currently, the concern is an association of legal entities and individual entrepreneurs subordinate to the Council of Ministers of the Republic of Belarus (<http://mona.bellegprom.by>). The concern creates conditions for the effective operation of the enterprises included in its structure for meeting the demand of people for high-quality light industry goods. The strategic objectives of the concern are to create leading brands of domestic light industry products and to promote actively the products of the enterprises at the domestic and foreign markets.

The concern represents the interests of 109 organizations (with 66,000 employees) of different forms of ownership: 19 public companies and 90 private ones. Among them there are 90 industrial enterprises (87.3% out of the total number of the organizations). The share of the Concern "Bellegprom" accounts for about 60% of light industry output in the country and 21% of the total domestic production of non-food products.

The priority of the concern's investment policy is the implementation of investment projects with science intensive and resource-saving technologies of export and import-substitution orientation. Technical re-equipment and modernisation of the production are implemented at all manufacturing enterprises of the sector. The innovative activity of the concern is arranged in two directions: research with introduction of its results in the production and modernisation of the existing facilities through the purchase of new equipment and introduction of advanced production technologies.

In 2012-2013 the sectoral scientific and technical program "Innovative Technologies for Light Industry" is being realized within the concern, the contracting authority of which is the Concern "Bellegprom" and the head executing institution is the Educational Institution "Vitebsk State Technological University". In accordance with this program, the following tasks are being implemented at the University:

- "To Design a Knitted Compression Sleeve for Rehabilitation of Patients with Breast

- Cancer and to Implement its Production" (Department of Knitting Technology, coordinator – Candidate of Technical Science, Associate Professor Charkovsky A.V.);
- "To Develop and Introduce the Technology of Ultrasonic Crimping of the Edge of Shoe Elastics" (Department of Physics, coordinator – Doctor of Technical Science, Associate Professor Rubanik V.V.);
 - "To Develop the Technology of Manufacture of Technical Textiles for Special Purposes" (Department of Spinning of Natural and Man-Made Fibres, coordinator – Doctor of Technical Science, Professor Kogan A.G.), and others.

Also, about 12-13 individual innovation projects are carried out at the University each year on the instructions of the concern, the results of which are introduced and implemented at the enterprises of the concern. The examples include the following projects:

- "Development and Implementation of Computer Technology for Multicolour Embroidery on Leather Articles" (Department of Machines and Apparatuses for Light Industry, coordinator – Doctor of Technical Science, Professor Sunkuev B.S.). Computer technology for multicolour embroidery on leather articles and design specifications for a semiautomatic machine for multicolour embroidery have been developed, a prototype of a semiautomatic machine has been made, production tooling for leather goods has been designed and produced. The developed computer technology of multicolour embroidery has been introduced in the conditions of the technopark of VSTU;
- "To Develop the Technological Process and to Implement the Production of a New Kind of Suit Fabrics with the Use of Cottonized Flax" (Department of Design, coordinator – Candidate of Technical Science, Associate Professor Kazarnovskaya G.V.), the development is being introduced at Orsha Linen Mill;
- "Development of Technology for Manufacture of Footwear with Uppers from Synthetic and Artificial Leather, Selection of the Optimal Material Systems to Achieve the Best Shape Stability in the Context of Materials, Coatings and Bases for Synthetic and Artificial Leather" (Department of Design and Technology of Leather Articles, coordinator – Doctor of Technical Science, Professor Gorbachik V.E.). The development is being introduced at JSC "Lida Footwear Factory";
- "Development of a Manufacturing Process and Assortment of Reinforced Sewing Threads" (Department of Spinning of Natural and Man-Made Fibres, coordinator – Doctor of Technical Science, Professor Kogan A.G.). The development has been introduced at the enterprise "Vitebsk Fur Factory" and the company "Altair" (Vitebsk);
- "Development of Biotechnological Methods of Finishing Flax-Containing Fabrics and Products" (Department of Spinning of Natural and Man-Made Fibres, coordinator – Doctor of Technical Science, Professor Kogan A.G.). The developed technology has been introduced at Orsha Linen Mill;
- "To Develop and Implement the Technology of Manufacture of Textile Laminated Materials for Special Purposes" (Department of Spinning of Natural and Man-made Fibres, coordinator – Doctor of Technical Science, Professor Kogan A.G.). The development is being introduced at the PC "Lenta" (Mogilev);
- "To Implement and Introduce the Process of Producing Fabrics for Special Purposes with the Use of Nanotechnology" (Department of Spinning of Natural and Man-Made Fibres, coordinator – Doctor of Technical Science, Professor Kogan A.G.). The

development has been introduced in the production conditions of the PC “Mogoteks”;

- “To Develop the Process and to Implement the Production of Flax-Containing Double-Sided Clothing Materials, Suit Companion Fabrics of a New Kind” (Department of Design, coordinator – Candidate of Technical Science, Associate Professor Kazarnovskaya G.V.), the development has been introduced at Orsha Linen Mill.
- Teachers and graduate, postgraduate and undergraduate students of the University are engaged in R&D.

RATIONALE AND INTENDED RESULTS

The Republican Innovative Unitary Enterprise “Research Technopark of Vitebsk State Technological University” (<http://technopark-vitebsk.by/>) was established in accordance with the decision of the Council of VSTU of July 09, 2010, № 11 in order to create an infrastructure for the development of a market for high-tech products and services, to promote innovative entrepreneurship in science and technology.

The technopark of VSTU was supposed to become a growth point for light industry enterprises of Vitebsk region and the country as a whole. The technopark, as a subject of innovation infrastructure, was set the following tasks: to facilitate introduction and implementation of innovative developments of the University scientists and employees, to help in the organization of the educational process by conducting laboratory and practical work, industrial practice and involving students in the implementation of innovations introduced at the technopark.

The technopark of VSTU belongs to the category of university technoparks designed to establish the relationship of scientific community and talented students with the real sector of economy with the aim of a more dynamic implementation of the University innovative developments. The main feature of the technopark of VSTU as a subject of innovation infrastructure is “growing” of new high-tech enterprises.

One of the important directions of the technopark’s activity, in accordance with the Decree of the President of the Republic of Belarus of January 3, 2007, № 1, is to assist in the creation of production with new technology or high-tech industries based on high technologies manufacturing high-tech finished products to be sold on the market. Due to the fact that the founder of the technopark, Vitebsk State Technological University, is a leading educational institution providing training for light industry specialists and the greater part of the research of the University teachers concerns light industry, the technopark regards introduction of innovative developments in light industry as one of the main directions of its activity. The preferential choice of the directions of its residents’ activity is conditioned by this reason.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The technopark of VSTU was established in accordance with the Government Program of Innovative Development of the Republic of Belarus for 2007-2010, approved by the Decree of the President of the Republic of Belarus of March 26, 2007, № 136 “On the Government Program of Innovative Development of the Republic of Belarus for 2007-2010”, which

included project 2.14. “The Creation and Development of the Technopark of Vitebsk State Technological University”.

By the order of the Ministry of Education of the Republic of Belarus of November 21, 2007, № 717 “On Introducing Amendments to the Order of the Ministry of Education of the Republic of Belarus of June 12, 2007, № 385” the Educational Institution “Vitebsk State Technological University” (VSTU) was ordered to fulfil the task of the Government Program for Innovative Development of the Republic of Belarus for 2007 – 2010. To execute the order, a working group of five people headed by Vice-Rector for Research was set up at VSTU on the instruction of Rector “On Setting up a Working Group” of March 27, 2008, № 127.

In June 2010, the working group was tasked to develop a business plan for the project “Creation and Development of the Technopark of Vitebsk State Technological University” and submit it for approval to the Ministry of Education of the Republic of Belarus. In August 2010, the department chairs of VSTU were instructed to identify promising research developments in order to establish unitary enterprises for manufacturing high-tech products and creating jobs for highly skilled specialists.

In accordance with the approved schedule of projects implementation, VSTU became the founder of the technopark of VSTU registered by Oktyabrsky District Administration in Vitebsk on August 26, 2010. The main activities of the research technopark of VSTU as stipulated in its Charter are: to promote the development of entrepreneurship in science, technology and innovation; to create conditions for legal entities and individual entrepreneurs who are the technopark’s residents to carry out innovative activity from the search (development) for an innovation to its implementation; to conduct economic activity aimed at getting profit; to participate in the development and implementation of government, sectoral, regional and international research programs and projects; to implement R&D; to produce science intensive and high-tech products; to train specialists, etc.

On 20th October 2010 a working group on the development of material and technical base of the technopark was set up by Rector’s order, which was tasked with:

- to draw up a cost estimate for redecorating the premises for the technopark;
- to compile a list of technical equipment required for the manufacture of innovative products with the name and cost of the equipment and the choice of the prospective supplier;
- to prepare a proposal on supplying the design office of the technopark with computer and office equipment.

On 25th October 2010, the Public Enterprise “Research Technopark of VSTU” was given the status of an innovation infrastructure subject (by the Order of the State Committee on Science and Technology of the Republic of Belarus № 275). By the resolution of the Council of Ministers of the Republic of Belarus of May 26, 2011, № 669 “On the Government Program of Innovative Development of the Republic of Belarus for 2011-2015” project 253 “The Organization of the Activity and the Development of an Innovation Infrastructure Subject” the Research Technopark of VSTU was included in the list of the most important

projects on the creation of new businesses and industries of decisive significance for the innovative development of the Republic of Belarus.

Article 26 of the Legislation of the Republic of Belarus of July 10, 2012, № 425-Z "On the Government Innovation Policy and Innovation Activity in the Republic of Belarus" defines the main activity of a technopark as the support of its residents. The governmental authority of the technopark of VSTU is the Ministry of Education of the Republic of Belarus. The main activity of the technopark is directed at using the results of intellectual work and implementing production of high-tech and science intensive goods. As a result, in November 2011, VSTU compiled a list of light industry products, which can be attributed to high-tech and knowledge-intensive ones for the inclusion in the "List of High-Tech Products of the Republic of Belarus" for further implementation of their production by its residents at the technopark of VSTU.

Laboratory classes for VSTU students are conducted on the premises of the technopark, which also corresponds to one of the statutory directions of its activity. The branches of five academic departments - Knitting Technology, Design and Technology of Leather Articles, Standardization, Materials and Technologies of Highly Effective Treatment Processes, Machines and Apparatuses for Light Industry - have been set up and operate.

Following the elimination of the experimental pilot plant of VSTU and reorganization in May 2011, two industrial sites - for the production of footwear and knitted goods - were organized within the structure of the technopark. The footwear production site specializes in manufacturing shoes for special purposes (that is, work shoes for productions). In the period of June-September 2011 the technopark produced shoes for special purposes in the amount of 9,119 pairs of own production and 14,892 pairs from raw materials supplied by the customer, 1,802 knitwear articles of own production and 5,732 articles from raw materials supplied by the customer, 2,580 running meters of knitwear for industrial use, 458 units of garments.

When making a decision on granting enterprises the status of resident companies, the technopark is primarily guided by their ability and willingness to participate in the implementation of innovations developed by the University scientists, as well as to conduct a training process on the directions of their activities. Therefore, the production profile of the technopark's residents fully complies with the areas of training at the University. As a result, the established branches of the academic departments conduct practical and laboratory work in the conditions of functioning productions with modern manufacturing facilities.

As of the beginning of 2013, leases of production premises have been signed with three operating technopark residents. The Private Unitary Manufacturing Enterprise "SvetProm" is the first resident of the technopark. It has been producing high-tech products on a leased production area of 108 m² since January 2012. University students of specialties 1-36 01 04 "Equipment and Technology of Highly Effective Treatment Processes," 1-36 01 01 "Technology of Machine Building" and 1-36 01 03 "Manufacturing Equipment for Machine Building" study the latest technologies of processing materials and programming on CNC machines at practical classes conducted with the use of HAAS high-performance vertical

machining centres belonging to the enterprise "SvetProm".

The Private Unitary Manufacturing Enterprise "Obuvnoye Remeslo" has arranged manufacturing sites for producing footwear and moulding articles from thermoplastic materials and polyurethane compositions on a leased area of 324 m². On the leased premises, the Private Unitary Manufacturing Enterprise "LeoPrint" has created a design studio for the development and manufacture of innovative garments from flax fabrics of Orsha Linen Mill in cooperation with the teachers of the Department of Design and University students. It also provides training for students of the specialties "Design and Technology of Garments" and "Design". The conduction of training sessions, industrial and pre-diploma practices, involvement of the University students in real production of individual design projects have been agreed upon with this resident. The subject area of the work performed by the company "LeoPrint" is important for the University as a leading institution of higher education for training light industry specialists.

The University scientists have developed and patented the technology of light industry waste recycling (there are 10 patents on the technologies of recycling and composition from waste, including patent number 16053 "Method of Rigid Polyurethanes Recycling", patent number 07135 "A Composite Material for the Manufacture of Footwear Parts", patent number 05190 "Composition for Shoe Bottom Parts"). For industrial waste recycling a set-up from screw-type extruders has been developed (protected by 8 patents, including patent number 06093 "An Experimental Extruder for Polymeric Waste Recycling", patent number 05953 "A Screw-Type Extruder for Polymer Containing Waste", patent number 05320 "An Extruder for Thermo-Mechanical Recycling of Integral Polyurethane Waste"). This is one of the innovative activity directions of the University. This development is being implemented on the basis of the technopark of VSTU. The demand for the development is confirmed by the production of a screw-type extruder on request of the Russian company "Vostok-Service", the largest footwear producer, in 2012.

Waste recycling technology is being introduced at the technopark jointly with the company "Obuvnoye Remeslo", an operating technopark's resident. At the initial stage of its operation this site focuses on the recycling of the waste produced by the company "Obuvnoye Remeslo", as well as by its own experimental production site. As a result, the organized site provides a guaranteed supply of raw materials (waste) and sale of its products. Products of recycling are composite thermoplastics in the form of granulated materials, from which the company "Obuvnoye Remeslo" will produce soles for the technopark's manufacture, a variety of innovative composite materials and products of geopolymeric purpose. The company "Obuvnoye Remeslo" has organized a site for moulding products from thermoplastic materials and polyurethane compositions obtained in the process of light industry waste recycling by means of the technology developed at VSTU. Waste recycling technologies developed by the University researchers as well as footwear parts and composite materials manufactured at the technopark and re-used in the manufacture of footwear, allow introducing a closed cycle of waste management and have an import substitution character. In the future we plan to recycle waste produced at other Vitebsk footwear factories - JV "Marco" and JV "Belwest".

The development of the sites for waste recycling of the technopark of VSTU and for

moulding products from thermoplastic materials of the company “Obuvnoye Remeslo” demands creation of fundamentally new designs of special equipment, which are not produced in the Republic of Belarus. For this purpose, as well as for drawing up various design specifications, a design office is being organized within the technopark’s structure which is gradually to become an independent legal entity, a resident of the technopark, in the same way as the site for waste recycling, in the process of getting orders and development. A wide profile of training various specialists at VSTU is ensured by the presence of qualified teachers, who will be involved in design work at the early stage of the design office operation.

Since September 2012 the technopark has been renting an auditorium in the fifth building of VSTU where equipment has been installed and three full-time technopark’s employees engaged in design and development of equipment and implementation of budget and self-financing contracts are placed. Thus, at the present time we can say that the first steps towards creating the design office have been made. In addition to full-time staff two fifth-year students work on a part-time basis there. It is expected that they will start working at the technopark after graduation from the University.

In 2012, the research laboratory in cooperation with the technopark’s design office performed:

- four stages of the task “To Develop and Implement the Technology of Artificial and Synthetic Footwear Material Recycling” (№ of state registration 20122730) ONTP “Innovative Technologies in Light Industry”, funding in 2012 - 100 million rubles.;
- task “Development and Introduction of the Technology of Leather Production Waste Recycling” (№ of state registration 20122729) of the Concern “Bellegprom”, funding - 50 million rubles;
- task of the Ministry of Education “To develop and Study the Process of Formation of Products from Polymeric Materials in Composite Production Tooling” (№ of state registration 20123506), funding - 95 million rubles;
- a self-financing agreement with the closed joint-stock company “Medical Enterprise “Simurg” (Vitebsk) “Development of Technology and Production of Uterine Pessaries from Silicone Rubber” (№ of state registration 2012350) funding - 37 million rubles (10 million rubles for the stage in 2012).

On the basis of the research carried out at VSTU in 2000 – 2010, a screw-type extruder of the model ESh-80N4 worth 554 thousand Russian rubles (about 160 million Belarusian rubles) was produced and dispatched on request of the company “Vostok-Service-Spetskomplektatsiya” (Russia).

As a result of the implementation of agreements and research in 2012 the following patent applications have been filed:

- “Installation for Testing Polymeric Materials for Multiple Flexing and Abrasive Wear”, a VSTU teacher and fifth-year student are among the co-authors (application has been filed jointly with VSTU);
- “Method of Recycling of Waste from Integral Polyurethanes”, a VSTU teacher and a fourth-year student are among the co-authors;
- According to the results of the research implemented at the technopark of VSTU

four works were submitted to the Republican Contest of Scientific Works of Students of Higher Educational Institutions of the Republic of Belarus in 2012;

- Development of Technology for Production of Geopolymeric Materials from Waste Products of Light Industry, done by a fifth-year student Brovko S.V.;
- Development of a Set-up for Bend Testing of Polymeric Materials, done by a fifth-year student Lisovenko Yu.S.;
- Study of Thermo-Mechanical Treatment Influence on the Properties of Composite Materials from Waste Products, done by a graduate student Matveev A.K.;
- Development of Technical Regulations and Study of the Properties of Composite Materials Based on Industrial Waste, done by a fourth-year student Logunova A.S.;
- Due to the high level of research and implementation of the work results in production, all the submitted works received the first category.

The produced developments of the design office employees were presented at the X Contest of the Aces of Computer-Aided Engineering annually held in Moscow (Russia) which confirms a high level of developments implemented by the technopark. According to the results of the contest two developments of the design office received diplomas for "Professional Use of Compass 3D".

In November 2012, the technopark of VSTU together with VSTU with the support of the Department of Education of Vitebsk Regional Executive Committee and the Company ASCON organized and conducted a workshop for teachers of drawing and labour education "Drawing and Computer-Aided Engineering in Compass 3D". School teachers, teachers of technical schools and colleges became acquainted with the capabilities of the system Compass 3D and discussed methods of training highly skilled and demanded professionals by means of comprehensive engineering education and studying CAD at all education levels.

In 1st November 2012, the seminar "Drawing and Computer-Aided Engineering in Compass 3D" was held at the University with the participation of the technopark of VSTU and with the support of the Department of Education of Vitebsk Regional Executive Committee. The seminar was attended by representatives of the ASCON group of companies (developers of the system Compass 3D) - a specialist in CAD systems I. Kolyada (Minsk) and the head of the educational program ASCON A. Ivashchenko (St. Petersburg). The workshop participants discussed the possibility of using the system Compass 3D, the Russian experience of using Compass 3D at schools as part of the educational program "Be an Engineer!", the experience of using computer graphics at the lessons of drawing, experience of using Compass 3D in teaching students of VSTU and producing engineering developments at the technopark of VSTU.

The management of the technopark of VSTU has attempted to enter the Concern "Bellegprom" with the aim to provide the possibility to implement innovations, produced by the University scientists and funded by the Innovation Fund of the Belarusian State Concern for the Production and Sale of Light Industry Products, at the technopark. The concern has a real possibility to become a scientific and production centre, ensuring the implementation of innovations in light industry. The draft resolution of the Council of Ministers of the Republic of Belarus is currently being considered by the State Committee on Science and Technology of the Republic of Belarus. The fact that the technopark is not

part of the concern significantly reduces the possibility to implement new developments. In accordance with the concern's decisions, the funds for the development and preparation of innovative products for implementation are allocated only to organizations that are members of the concern.

The technopark plans to continue conducting research in the sphere of the development of competitive, low-waste and energy-efficient processes of obtaining new materials, half-finished and finished products in accordance with the guidelines of VSTU. In carrying out its statutory objectives, the technopark of VSTU plans to promote the development and introduction of modern innovation technologies, not only in footwear industry, but also in production of textile and knitted materials, development of garment industry and manufacture of equipment for light industry.

RESOURCES REQUIRED AND USED

In accordance with the Program of Innovative Development of the Republic of Belarus budgetary funds in the amount of 10 billion rubles were allocated for 2010-2014 with the aim of creating and developing the technopark of VSTU. In 2010, part of these funds were directed to the purchase of imported equipment for footwear production. In 2011, the technopark of VSTU was allocated funds in the amount of 1700 million rubles according to the Program of Innovative Development of Belarus for the organization and development of an innovation infrastructure subject. As a result of arranged tenders and concluded contracts, equipment for the design office has been purchased.

In particular, a hardware and software complex worth 410 million rubles including seven specialized workstations with software intended for design of various types of equipment was purchased. To facilitate work a plotter, two printers and a multifunction device for a total value of 18 million rubles were bought. In 2012, a hardware-measurement complex worth 636.3 million rubles including a 3D-scanner, a 3D-printer and workstations to maintain the equipment was purchased out of the money allocated to the technopark. The purchased equipment allows carrying out work towards the creation of accurate 3D-models of real objects with a high degree of detail, getting information about the surface, shape and colour of the object in a digital form, and then producing real solid copies of 3D-models of design and production tooling. Thus, as a result of the provided material support for a total value of 1,064 million rubles, the design office is ready to solve virtually any design problem.

For the organization of the experimental site for waste recycling a compressor, crusher and grinder were bought for a total amount of 485 million rubles in 2011. A special extruder worth 47 million rubles was made by the technopark staff when performing a contract of the Ministry of Education. In 2012, a special extruder-granulator worth 364 million rubles was purchased. The total amount spent on the purchase of the equipment for the waste recycling site is 896 million rubles. At present, work on licensing the experimental site for waste recycling is being conducted. All the work on the arrangement of the waste recycling site is financed through the implemented research.

For partial funding of the work on the design office organization the project "To Develop and Implement the Technology of Artificial and Synthetic Footwear Materials Recycling"

with a total funding of 420 million rubles for the period of two years was submitted to the sectoral scientific and technical program “Innovative Technologies in Light Industry” (the head organization executing the program is VSTU).

The basis of the scientific and technical and production potential of the established technopark is the University teachers and staff involved in carrying out research, development and experimental-technological work conducted at the four faculties of the University, where there are highly skilled teams of specialists in different areas of industry ready to meet the challenges in almost all spheres of production at the highest level.

FACILITATING FACTORS

One of the key factors for the technopark’s success is the support of the senior authorities of VSTU - Rector and Vice-Rectors in charge of the relevant activity directions. Vice-Rector for Research Alena Vankevich organizes and coordinates the research work of the technopark. The director of the technopark Konstantin Matveev is engaged in research, is the author of patents, a member of the University Council, and a member of the Scientific and Technical Council.

VSTU is well-known to enterprises of light industry in the Republic of Belarus as it is the only university in the country training engineers and technical workers for this industry. The graduates of VSTU work in light industry organizations of Vitebsk region including shoe factories with which the University has traditionally had strong ties.

The technopark of VSTU got engaged in the Sectoral Scientific and Technical Program “Innovative Technologies in Light Industry” (for the years 2012-2016) as the executor of task 05 “To Develop and Implement the Technology of Artificial and Synthetic Footwear Materials Recycling” and a manufacturer of a composite material (coordinator – the technopark’s director Matveev K.S.). In whole, four more tasks of the program are implemented at VSTU (headed by the leading scientists of VSTU: Chair of the Department of Design and Technology of Leather Articles Professor Gorbachik V.E., Chair of the Department of Spinning of Natural and Man-Made Fibres Professor Kogan A.G., Chair of the Department of Physics Professor Rubanik V.V., Chair of the Department of Knitting Technology Associate Professor Charkovsky A.V.). The University is the head organization-executor of the program.

CHALLENGES AND OBSTACLES

One of the first challenges faced by the University authorities while creating the technopark was the unwillingness of some scientific personnel to commercialize their scientific developments as well as the absence of a specialist in innovation management.

In addition, there also arose difficulties caused by the peculiarities of the regulatory and legal basis governing the activities of technoparks in the Republic of Belarus. A technopark as a subject of innovative infrastructure has no essential privileges at rent of rooms, at payment of the VAT and utilities it is equated to the industrial enterprise. The benefits offered by a technopark to its residents are less attractive than the benefits provided to residents of free economic zones. In the town of Vitebsk organizations may be located on the territory of the Free Economic Zone "Vitebsk" irrespective of whether their activity is innovative or not. It greatly hampers the work of the technopark on attracting residents

and implementing the scientific developments of the University.

The main customers of the scientific developments of VSTU have traditionally been companies that belong to the Concern “Bellegprom”. The technopark of VSTU could become a research and production center ensuring the implementation of innovations in light industry on condition that it becomes part of the concern. In accordance with the Decree of the President of the Republic of Belarus № 596 “On Some Issues of the Formation and Use of Innovation Funds” developments made on request of the Concern “Bellegprom” can be implemented only at the enterprises included in the concern. The application of the technopark for membership in the concern is currently being considered by the State Committee on Science and Technology of the Republic of Belarus. Another problem is the lack of premises for leasing to the residents of the technopark. Partly this problem is solved through the University premises.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

For VSTU the establishment and development of the technopark is an innovation because traditionally the University scientists have been involved in the innovation process only at its first stage - R&D - and had no practical experience of participation in the commercialization of their developments. The results of R&D were implemented in production at the enterprises on the request of which the research was carried out.

The establishment of the technopark has allowed:

- accelerating the implementation of research work results;
- creating conditions for legal entities and individual entrepreneurs - residents of the technopark for carrying out innovation activity from search (development) for an innovation to its implementation;
- creating a bank of research and innovative proposals and a system of transferring innovative projects for their industrial use;
- increasing the motivation of students and teachers in research work;
- creating the possibility to organize business activity in the scientific and technological sphere with the participation of University academic staff, individual scientists and specialists, and postgraduate, undergraduate and graduate students.

SUSTAINABILITY OF THE GOOD PRACTICE

Currently the technopark’s residents predominantly work in leather and footwear sub-sectors. However, the tried and tested mechanisms can also be transferred to other sub-sectors of light industry (textile, knitting, sewing). Sustainability of the good practice of the technopark’s development is ensured by strengthening cooperation ties between its residents, which increases the chances for successful commercialization of R&D.

Also, it is advisable to develop collaboration with other structures of business support existing in the region. For example, the scientific and practical workshop “Innovative Entrepreneurship in Vitebsk Region: Challenges, Experience and Ways of Development” was held at the University in 2012. The workshop was organized by VSTU and ALC Vitebsk Business Center “Center for Support of Entrepreneurship and Technology Transfer”. In the course of the workshop, the prospects of innovative entrepreneurship enhancement in Vitebsk region, the formation of an entrepreneurial mind-set of young people, and use of

practice-oriented methods of training at higher educational establishments were discussed. The workshop advertised the technopark to the youth of Vitebsk region, as a result of which the technopark has received three applications from prospective residents, one of whom is a graduate of the University.

TRANSFERABILITY OF THE GOOD PRACTICE

The University department chairs have instructed staff and postgraduate students to interact with the technopark. The results of their work have contributed to the enhancement of innovation activity at their departments and provided substantial support to the technopark. The instrument of cooperation between the University departments and the technopark is the creation of branches of the academic departments. At present, the branches of the Academic Departments of Knitting Technology, Design and Technology of Leather Articles, Standardization, Materials and Technologies of Highly Effective Treatment Processes, Machines and Apparatuses for Light Industry are successfully operating.

A creation of the Department of Machines and Apparatuses for Light Industry (a semi-automatic machine for multi-colour embroidery), transferred to the technopark in September 2012, allowed production of goods, the profit from which amounted to 1.5 million rubles. Systematic work with the department has been started, areas of joint research have been identified, postgraduate students are getting involved in research work, and therefore the results will be even more impressive in the future.

The greatest cooperation is being observed in the work with the Department of Standardization. The employees of the department draw up normative technical documents, local normative documents in the field of standardization and metrology and carry out research work. As the main result, one can point out the registration of six specifications and four technical regulations for manufactured and scheduled for production goods. The saving rate from the introduction of the department's developments at the technopark amounted to more than 30 million rubles in a year. Two invention applications have been filed jointly with the department, 5 papers on the research results have been published. Undergraduate and postgraduate students are involved in the work. As a result of the publications, filed invention applications and actual implementations, three student papers submitted from the department to the Republican Contest of Students' Research Work have received the first category.

The work with the Department of Design and Technology of Footwear started quickly and very effectively in the academic year 2012-2013. The staff and students of the department develop models, technical specifications and templates. In 2013 the academic staff of the department together with the students drafted a re-layout of the technopark's footwear production site to optimize the arrangement of equipment and work places.

The academic staff of the Department of Machines and Technology of Highly Effective Treatment Processes services the activity of the technopark's design office and contributes to the development of its experimental test site for recycling. It should also be noted that the cooperation of the technopark with the academic departments of the University is actively developing. The Chair of the Department of Economics and Marketing together with the students of the specialty "Marketing" has worked extensively on making up a business plan for the technopark's development. This line of work of the department is very

valuable due to the lack of specialists of a similar qualification in the technopark.

The specialists of the Department of Economics have participated in the improvement of the accounting policy of the technopark. The specialists of the Department of Design and Technology of Garments have created templates, design specifications and made garments from the remainder of fabrics kept at the warehouse of the technopark. A decision on the manufacture of garments within the framework of the educational practice has been made. The Students' Fashion House works on the sewing site of the technopark, where students have the opportunity to produce garments on their own models. Engineering students have practice on the basis of the University technopark, which improves the quality of the acquired skills.

LESSONS LEARNT AND RECOMMENDATIONS

The creation and development of the technopark should be implemented gradually through the search for new residents, and then if necessary funds should be raised to finance the purchase of equipment and machinery for production sites and offices.

To encourage active participation of the University scientists and other staff in the development of the technopark it is necessary to make a provision in the collective agreement about employees' bonuses for the work performed for the technopark. While creating the technopark, it is necessary to engage experts in innovation management for development of a strategy and business plan of the technopark, for promotion of the services provided by the technopark on the market, for attraction of new residents and effective cooperation with all the involved parties.

In the process of the development of the technopark's activity, the involvement and commitment of all University employees and services, including not only academic staff and students, but also such departments as the Department of Labour Protection, the Faculty of Further Training and Retraining, R&D Department, Editorial and Publishing Department, etc. are of great significance. The effective form of involvement of all employees in the problems of the technopark's development is the discussion of these issues at the Scientific and Technical Council and the Council of the University.

Further progress of scientific research in VSTU takes place in accordance with the priority directions of scientific and technical activity, scientific research and the concept of scientific development in the Republic of Belarus, the implementation of which should help improve the efficiency of research at the University, enhance the development of high-tech industries and the newest scientific, technical and technological areas of high priority in the Republic of Belarus.

The main objectives of the development of scientific and innovation activity at VSTU are as follows:

- expansion of the subject area of diploma works performed for the technopark of VSTU;
- expansion of cooperation between the University scientists and the technopark, development of the branches of academic departments at the technopark, facilitation of educational practice organization;
- advertising of the technopark in Vitebsk region, as well as in the border regions of

- Russia (Smolensk, Pskov and others);
- others.

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22. Knowledge Transfer Infrastructure and Promotion of Entrepreneurship, Creativity and Innovation

Cherkasy State Technological University, Ukraine

SUMMARY

At the modern stage of development, Ukraine's economy is undergoing rapid changes caused by global trends of development such as globalization, the deepening of international division of labor, increasing of openness of national economies, the growth of the role of technologies, human capital and information, the aspiration for innovative development and maximizing the economic potential.

The economic system of Ukraine is at the stage of structural transformation, which is expressed in the transition from the regionalization of economic space to inter-regional and macro-regional globalization and integration. Regional transformation of the form, content, scope and nature of entrepreneurship contributes to the consolidated realization of national interests of Ukraine both in the economic space of the country and in the world as a whole.

The innovation system is the core of the dynamic changes in the structure of the economy in developed countries and developing countries. One of the necessary conditions of progressive socio-economic development of the country is the availability of an effective innovation infrastructure providing for the adoption and implementation of research results to the market of goods and services. The leading place in this process is occupied by business incubators, which were created by higher education institutions. According to the economic scale integration of regions, business incubators should primarily focus on the comprehensive development and exercise interregional nature of the activity.

ADDITIONAL INFORMATION

Cherkasy State Technological University (CSTU) is a higher education institution which has the IV level of accreditation. CSTU carries out its educational activities since the 1960s in the form of:

- Branch of the Kiev Institute of food industry (1960-1970);
- The Cherkasy branch of Kyiv engineering and construction Institute (1970-1979);
- The Cherkasy branch of Kyiv Polytechnic Institute (1979-1991 biennium);
- Cherkassky engineering Institute of technology (1991-2001).

According to the order of the Ministry of education and science of Ukraine from 16 November 2001 №684 announced a decree «On creation of CSTU», which is based on state ownership and is subordinated to the Ministry of education and science of Ukraine. CSTU is the leading institution, the structure of which unites 7 academic buildings, 7 faculties, 45 departments, Smelyansky industrial-economic College of CSTU, scientific and technical library, publishing center, 5 research laboratories, Internet, own website, two recreation, sports centre stadium, industrial and commercial base, Cherkasy engineering and scientific center with the production activities in the field of energy and energy efficiency, driving

school.

Today 6000 students in 37 specialties and 28 areas of training study at CSTU. The total number of employers are 1174, including teaching staff with a number of 615.

TYPE OF PROBLEM OR TRANSFORMATIONAL AND MODERNISATION PROCESS

The weak link between education, research and innovation

THE WIDER CONTEXT

Attraction of students to scientific and innovation activity is one of the main tasks of higher education and the higher education institution. Ability and skills for research and innovation activity are invaluable for the future of specialist and form one of the key components of his professional success. This is particularly true for engineering and economic specialties that by its nature, uniqueness of the situation, and dynamism require from specialist fast and accurate decisions. Scientific-research and innovative activity of students at the University is the subject of keen attention of the entire teaching staff and issues of organization, systematic involvement of each student at all stages of training in research work in the different forms of individual and collective curricular and extra-curricular, compulsory and voluntary are given special importance.

That is why the school should educate students not only as future professionals of a certain field, but as future scientists, businessmen, entrepreneurs. In our country there is a problem of weak links, and sometimes the complete lack of it, between education, research and innovation. The attraction of student to work in business incubators, techno-incubators and techno-parks is one of the forms of organization of research and innovative activity of students at the universities. In recent years, the transformation of the market system of economy in Ukraine is accompanied by the growth of entrepreneurial activity in almost all spheres of the economy. Enterprise, without doubt, plays a decisive role in realization of problems of the modern economy, which is reflected in the activities of different business structures that make the appropriate changes on both the macro-and microeconomic levels.

The development of entrepreneurship among the youth is attached of great importance in the framework of regional policy of support of entrepreneurship and development of a corresponding infrastructure. In particular, network of regional and urban business centers, innovation centers, business incubators, technological parks are formed etc. that may give real advisory, information, educational, regular and other kinds of support to subjects of entrepreneurial activity at the initial stages of their creation. Development of small business (SB) is a relatively fast and at the same time effective way to solve socio-economic problems, which is recognized as one of the priority directions in the activity of the Government of Ukraine. Measures for supporting the SB to be considered as the main element of the socio-economic policy of the country in general. Formation of the institutional environment for innovative development of the country provides the development of infrastructure for support of new enterprises in the business incubators, technology parks and industrial parks. Although the number of small enterprises in Ukraine is steadily increasing, the country lags far behind that of Western States on the main integrated indicators that characterize the development of small business. As the

development of small entrepreneurship among the youth in Ukraine needs support from the state.

One of the modern technologies of small business support and innovation at the universities is the development of business incubation, which is based on the activity of business incubators and business centres. As centers for entrepreneurship support, technoparks, consulting and marketing organizations of various forms of property, business incubators and business centres form a system of infrastructure for entrepreneurship support in Ukraine, that is why the organizational and economic environment for functioning of the business sector, creates conditions for stimulation of creation and quick adaptation of the subjects of small business to the market.

The national program of assistance to development of small entrepreneurship in Ukraine directs the efforts determined by the state of interested party on the establishment of a specialized developed infrastructure in all regions of Ukraine, focused on the needs of sustainable development of small entrepreneurship in accordance with the requirements of a market economy. Infrastructure of support of entrepreneurship among students in the region is an integral part of market relations and contributes to the solution of national problems in terms of structural rebuilding of the economy of the region, leveling of disparities of regional development, creation of new work places and other. Potential consumers of infrastructure elements of entrepreneurship support in the region are the small enterprises, individual entrepreneurs, students who intend to start their own business.

Centres and entrepreneurship development agencies, state and municipal funds for support of entrepreneurship, funds of crediting assistance (guarantee funds, funds sureties); joint-stock investment funds and closed investment funds, attracting investments for small and medium-sized enterprises, technoparks, scientific parks, innovation and technology centers, business incubators; Commerce and craft centres; support centres of subcontracting, marketing and business training centres, the export promotion agency of goods, leasing companies, consulting centers and other organizations belong to the infrastructure facilities for support of small business.

Network of infrastructure of support of small entrepreneurship among students can be classified according to certain criteria, which emerge in the course of its formation, that is:

- for the founder: state, non-state, public;
- for the status: all-Ukrainian, regional, local (district);
- for the form: organizational and technical, informational and analytical, financial and credit;
- for the kind of activity: advisory bodies, consulting structures, information centres, innovative and investment companies, educational institutions etc.

At present in Ukraine, the business incubators established at the universities and only begin to enter the market environment and their perspective is determined by such factors:

- entrepreneurial structures have growing needs in practical training, consulting services, preparation of the information security (including constituent documents, reports, software, marketing information and other);

- potential investors need the confirmation of financial status, material-technical and personnel support of enterprises for abatement of the risks on investment in innovative projects;
- lease of buildings, premises, office and other equipment by enterprises- beginners entails significant costs and reduction of working capital in the conditions of lack of credits for these purposes;
- the growing competition requires the strategic marketing and management from successful companies, while entrepreneurs do not have the opportunity to raise these issues independently;
- entrepreneurial firms, a potentially profitable companies in the context of fiscal policy of the state need the time for the formation and adaptation to the market.

RATIONALE AND INTENDED RESULTS

In the world practice the interaction of elements of innovation infrastructure in higher education institutions is widespread , the methodology and scientific justification of the operation of such structures is missing. The development of such structures will make a significant contribution to the development of scientific theoretical and methodological bases of creation and functioning of the elements of innovation infrastructure in higher education institutions.

Planned results:

- 1) complex analytical review of the current state of business incubators in Ukraine that includes comparative analysis of statistical data, description of key species of functioning business incubators, their basic infrastructure elements.
- 2) Analytical review of modern forms and methodology of organization of business incubators, including separated geographically, on the basis of complex generalization of the world experience.
- 3) Methodology of creation of elements of the information and organizational infrastructure of business incubators, including engineering centres, on the basis of generalization of the world experience, which includes substantiation of necessity of presence of each element of the infrastructure in the business incubator as a specific type of comprehensive recommendations on the formation in the process of research of allocated elements of informational and organizational infrastructure in business incubators.
- 4) Generalized static organizational and functional model of interstate, regional business incubators (as the initial data for the dynamic model), which include the key elements of informational and organizational infrastructure for the reasons of their necessity.
- 5) Imitating dynamical model of the business incubator that provides a consolidated view of the processes of interaction of business incubators and the optimization of individual business areas and business processes in business incubators, including the formation of integrated engineering and coaching centres connected on a virtual level.
- 6) Imitating dynamical model of the business incubator that provides a consolidated view of the processes of interaction of business incubators on how stochastic dynamical systems with aftereffect and optimization of individual business areas and business processes in business incubators, including the formation of integrated engineering and coaching centres connected on a virtual level.
- 7) Analytical materials, including the results of testing of the dynamic model on the

example of creation a business incubator of CSTU in the framework of the Cherkasy region.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

At CSTU operates the public organization “Technological incubator of CSTU”, which provides mechanisms for management and commercialization of innovative projects that are created at the University. Its structure is presented in Figure 1. Induced diagram of management commercialization features:

1) Management of commercialization of created innovations separated from the university in separate organization - Development Fund of the University. In the name reflects the purpose of the activity, which is primarily aimed at development of research and innovation components of the University.

2) A managing company in accordance with the University Charter and the current legislation is created in the organizational-legal form of a Fund. In this case, the University may not contribute assets to the charter capital, to be co-founder of the Fund. The activities of the fund are aimed at achieving the research objectives. Besides the University, the founders of the Fund are the Association of University graduates and non-state enterprises. They are also strategic partners of the University. The University does not make a contribution to the Charter capital of the Fund, since under the law it has not such possibility. Statute capital form the Association of graduates of University. It is an Association of individuals; private companies who have an interest in conducting of researches in the areas in which specializes the university - strategic partners of the University.

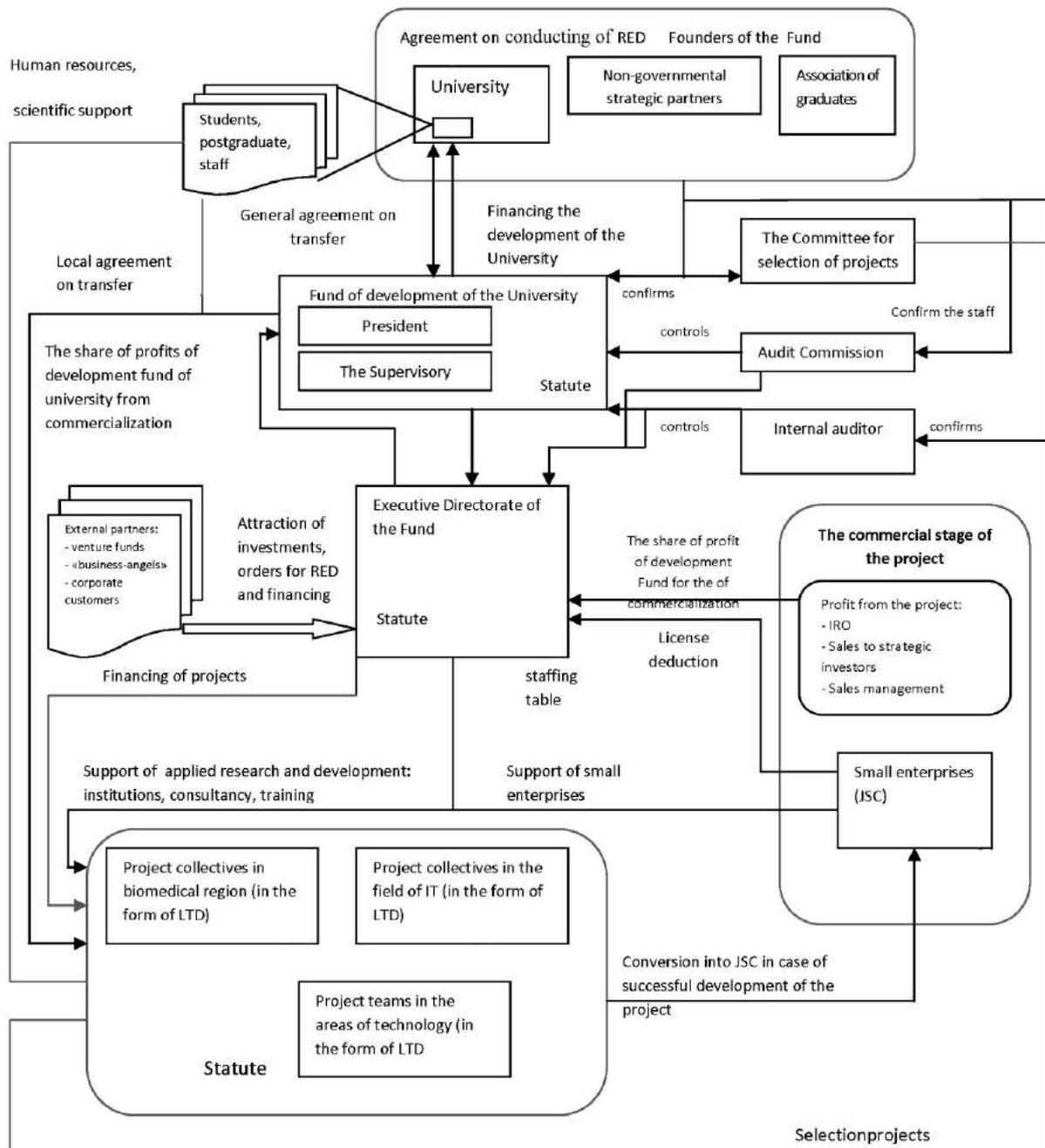


Figure 1. The scheme for the work of the Development Fund of the University

3) The owner of the intellectual property (IP) makes out with the Fund the General agreement on transfer of innovations. IP owner can be both the University and the physical person - author of patents: an employee, a graduate or a student of a University.

In the first case the situation with transfer IP concluded by a number of circumstances. The University, in accordance with applicable law, may have the right to RSTA (results of scientific and technical activities). But at present not approved delegated legislation describing the rights - a standard contract, methodical instructions for estimating costs. In addition, even after being granted RSTA University will be find is in the situation of „legal vacuum” - the University has the right to independently dispose of IP, which is in your possession, including to provide patents and sign license agreement on the introduction into

the economic turnover of intellectual property objects. The Committee for the selection of projects is engaged in decision of projects falling in the business incubator.

Since the task of selection of innovation projects is of great importance, a mistake was made when making a decision at this stage may be detrimental to the activities of the business incubator. The use of expert estimations in the selection of the project puts the task of forming an independent expert team, that is the Committee. The Committee should not depend on neither the University nor of the Development Fund. Therefore, representatives of middle business in the region, representatives of venture capital, representatives of academic circles may be include to the Committee for selection of projects.

During its activity the Fund has as a local goal – to support of University innovative projects, and more general the long-term goal is the development of scientific-innovative activity at the University. Support of University innovative projects - that are, projects, authors of which acts as the University and its students, postgraduate students, staff and graduates is in the business incubator, which was organized by the Development Fund. Provision of Support is the main goal of the Fund's charges. Costs associated with provision of support services for projects - administrative, accounting, legal, educational, consulting and other services. In exchange for receiving of services developers provide the share for the Fund in the innovative project. Depending on services, that are provided, stages of the project, its scale and stage of risk, the share can be from 1-10 % to 50-60 %.

On the basis of the project the subsidiary enterprises are created in the business incubators s that conduct DKR, establish technologies, and to organize production, carry out the sale. The firm is created in the organizational-legal form of the LLC ; this is because the registration of the LLC is one of the least-cost variants over the other organizational and legal form. If the project is successfully passes through these phases, on its basis a small innovative enterprise is formed in the organizational and legal form of OSC - open joint stock company

Small innovative enterprise can develop in one of three directions:

- it can continue to use the services of the business incubator;
- it can use the services of a technopark (as outside profile and as technopark, organized by the Fund for this purpose);
- it can develop on the open market.

In this conditions, a small innovative company can exists from 1 to 3 years. In the case if this phase is successful, than the completion of an innovative project is realized that is gaining the profit.

RESOURCES REQUIRED AND USED

The creation of business- incubator in educational establishments should occur on the basis of harmonic combination of interests of local government authority, enterprise and community within tasks of regional programs of economic development. The competence of civil servants, which are answerable for the support of business on the regional and local levels, is very important. The power-holding structures and also organisations, which support development of small business (banks, funds, beneficial association, leasing companies etc.) should foster the creation of favourable environment for the business

development. Then BI can use the regional resources and can become the resource for the rational ranging of the regional economic system, branch spetialisation and clustering, inter-branch integration and social consolidation of the regional economic system.

The tasks and functions of business incubator have an effect on the environment, and it becomes an instrument of transformation of economic reality. The proposed conception of business incubator has a range of important components: functions, principles of activity, physical parameters of infrastructure, services.

We believe that business-inkubator in in educational establishments have occur the next functions: infrastructural; service; communication; coordinating; consulting; research; planning and financial support, intellectual- psychological and educational.

Business incubator of the educational institution is an element of infrastructure of small business support in the region, directly interacting with small enterprises, creating the conditions for their successful work in the region. Infrastructure function of the business incubator is expressed in the fact that it is an element of a regional system of small business support. Performing a service function, the educational institution through the business incubator provides enterprise facilities with equipped work places, office services, professional advices, test equipments, etc.

Communication function of the business incubator is for the ensuring of interaction between the participants of entrepreneurial activity for the creation in the region a consolidated business environment with the stable economic and business relation. This function is realized in the creation of databases on small business, programmes and funds, and in providing of small businesses with access to this information.

Consulting and educational functions meant the providing the legal and financial support to entrepreneurs; the provision of analytical and educational materials, databases, improving the skills and the educational level of entrepreneurs; conducting of educational events - trainings, seminars, exhibitions, etc. Business incubator implements these functions, bu making the forums and conferences, exhibitions of products, which contributes to the strengthening of cooperation between small enterprises at the regional level.

Intellectually-psychological function consists of creating a positive image of small business through interaction with specialized in the field of small business media, including publications in periodicals, publishing information on the Internet, dissemination of information on regional TV channels, organization of press conferences. Implementation of this function also includes the provision of information and consulting support for small businesses for their training forms and methods of interaction with the media to establish mutually beneficial partnerships. Interaction of BI with the regional media is also necessary to promote the business incubator, the dissemination of information about the activities, name and order of granting of services, the provision of facilities.

FACILITATING FACTORS

One of the factors of successful activity of business incubator is the integration of the incubator with science. Cooperation with educational and research structures is necessary to incubator to be a system that develops, act in harmony with the environment, produce

firms, producing competitive products, which is required at the market.

This was achieved by the integration with science, involving scientists and SRACD in its activities by establishing partnerships with universities, research institutes, centres of expertise of the region-donor. Such cooperation allows to form local scientific and production clusters, which carry out the technology of commercialization. Some researchers have the opportunity of practical realization of their developments and companies enriched with scientific and technical developments that have enhanced the competitiveness of the products. Business incubator of the educational institution must provide the most comprehensive set of services required for the development of the enterprise.

CHALLENGES AND OBSTACLES

Business incubators at educational institutions have difficulties in attracting of financial resources because of the high risks of innovative activity and the low level of their collateral. Besides of the financial problems of small innovative enterprises have challenges related to scientific and research activities; - lack of the experimental equipment and premises for development, it is impossible to use the resources of public research institutions through the legislative restrictions.

Development of small innovative entrepreneurship through the business incubation can significantly reduce the risks for companies at the stage of formation. Business incubator of educational institution assesses the prospects of technologies commercialization, carries out the search of investors and partners for innovative enterprise, carries out the technological audit, renders assistance in promotion of the projects seeking the buyers of technology.

The business incubator of the institution contributes to the formation of innovation infrastructure at local, regional and interregional levels, which leads to strengthen the innovation activity of small enterprises, contribute to the development of scientific and technological capacity and competitiveness of the economy of the region.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

One of the modern technologies of small business support and innovation is the development of business incubation, the center of which is education institutions, this process is based on the activity of business incubators and business centres. As the centers for entrepreneurship support, technoparks, consulting and marketing organizations of various forms of property, business incubators and business centres form a system of infrastructure for entrepreneurship support in Ukraine, that is, the organizational and economic environment for the operation of the business sector, creating conditions for stimulation of creation and quick adaptation of the subjects of small business to the market. The national program of assistance to the development of small entrepreneurship in Ukraine directs the efforts of certain state parties concerned, in particular of educational institutions, on the creation of a specialized developed infrastructure in all regions of Ukraine, focused on the needs of sustainable development of small entrepreneurship in accordance with the requirements of a market economy. The practice of creation of technoparks and business incubators in educational institutions is the best and up to date.

SUSTAINABILITY OF THE GOOD PRACTICE

List of services provided at CSTU Business Incubator:

1) Consulting services:

- preparation of business plans;
- services for the preparation and development of documents; legal issues;
- taxation;
- maintenance of accounting records;
- licensing;
- certification;
- management consultancy;
- consultations on financial-credit support;
- advising on hardware and software.

2) Rent of office equipment

3) Rent of telephone and Internet communications

4) Services of office managers:

- reception and transmission of information;
- sending and receiving faxes;
- composition, editing and printing of texts;
- photocopying;
- scan;
- e-mail services;
- courses;
- provision of information.
- 5) Conference services
- organization of business meetings;
- presentation of companies.
- 6) Provision of business information
- methodological materials;
- guides;
- dictionaries;
- periodicals.

7) Services for the development of entrepreneurship support structures:

- staff training in the business support structures;
- internship of personnel;
- assistance in the organization of work of entrepreneurship support structures;
- assisting in the development of the designs of the working documentation, databases.

8) Organization and conducting of trainings, workshops and conferences on the theme of establishing and conducting of business, as well as the psychological aspects of the implementation of such activities.

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23. Development of the University Innovation Activity

Lviv Polytechnic National University, Ukraine

EXECUTIVE SUMMARY

Successful University Innovation activity is among the key factors of effective University development. In Lviv Polytechnic National University (LPNU) the development of successful University Innovation activity was ensured through the establishment of technology transfer office (Innovation office). Establishment of the Innovation office at LPNU contributed to the development of “Education – Research - Business” triangle through the acceptance of new innovation culture by the University scientists and more effective commercialization of the University research results. The background, stages, facilitating factors, obstacles etc. of LPNU Innovation Office development are presented in the current case study.

BACKGROUND INFORMATION

LPNU, which will soon celebrate its 170th anniversary, is the oldest technological university in Eastern Europe and one of the largest in Ukraine. A wide choice of three-stage academic and professional courses is offered here, leading to the degrees of Bachelor (64 directions), Engineer and Master (128 specialities). Students with the required aptitude can continue their studies at Ph.D. level. At LPNU, particular value is placed on active research, as only through advanced scientific research can the new knowledge be acquired which is necessary to ensure a modern, high standard of teaching.

LPNU has a long tradition of educating international students. During a period of 50 years about 3,000 first degrees and more than 130 doctorates have been awarded to students from over 70 countries in Europe, America, Africa and Asia. Degrees from Lviv Polytechnic are well known all over the world and are held in high esteem. The University comprises 19 institutes (among them 16 educational and research institutes with 104 academic departments), the Distance Learning Institute, the Post-Diploma Education Institute, the International Institute of Education, Culture and Links with Ukrainian Diaspora. There are over 2300 faculty members, 250 of whom hold the degree of Doctor of Science and over 1180 - the degrees of Doctor of Philosophy. Modern teaching laboratories and computing laboratories with Internet access enable courses to be kept up to date and taught to a high standard. Scientific research is pursued in 4 large research and design institutes and in about 100 laboratories, with a staff of about 1000 researchers.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Weak links between education, research and innovation
Weak knowledge-transfer infrastructure at the higher education institutions and lack of entrepreneurial, creative and innovation skills

THE WIDER CONTEXT

Formation of market relations and competitive product markets predetermine the necessity

of searching for new effective decisions, which make possible creation of competitive advantages via implementation of productive, technological and organization-managerial innovations through establishment of new and development of existing high technological enterprises of small and middle businesses within a region. Hereby significant role is performed by higher educational establishments as important participants of the knowledge and technology transfer system.

Knowledge implementation through innovations and information usage becomes a main factor of international competitiveness and creates living standards enhancement preconditions. Knowledge, innovations and their control become new criteria of determining state of national economics. Up-to-date research university should be oriented both for training competitive specialists, science and science-pedagogical staff and for transfer of new knowledge and innovative technologies, development of innovative goods of world level, implementation of scientific achievements, technical, technological and engineering developments.

Economics based on knowledge performs not familiar up to now function for universities, i.e. research results commercialization and this activity becomes not less important university function than educational and scientific. In market economics countries university transformation in direction of active entrepreneurship support has no such obstacles as they are in countries in which planning economics dominated up to recent times. Under market economics conditions the process of innovative structure formation passed long evolution stage. Specific models are created and the role of every constituent of innovative system is determined, and all participants understand the game rules and responsibility for obtained results. Commercialization of research and development work results (further – R&D) of universities occurs, in particular due to the work of university innovation offices. It is worth to take into consideration that the existence of such structures significantly simplifies the commercialization process. The most of scientific research at these universities are performed for costs of large corporations, which are interested in obtaining results.

In home universities R&D financing takes place due to research fulfillment by orders of enterprises of different property forms on one side as well as in accordance with state orders on the other side and by state budget costs to conduct fundamental and applied research. Budget financing forms the base for scientific research in many universities. While formulating queries to perform such studies, in vast majority potential users of the results are the private structures, which in turn do not fund these studies and it will no further guarantee their implementation, and hence R&D results commercialization process differs significantly. Our experience suggests identifying the main problems of R&D results commercialization in Ukraine. Usually, the task of bringing the R&D results to a research sample within the public funding is difficult. Potential customers – industrial enterprises – are not interested in supporting such projects because of high risk and long payback period. Enterprises are ready to implement only fully completed developments with minimum investments and short payback periods. In its turn universities do not have operating assets to complete their developments for implementation and in some cases developers increase prices groundlessly. So, every participant of the process tries obtaining maximum economic effect from its activity at market and aims at minimizing its risks.

Obviously, it is clarified by the absence of dialog and collaboration between developers and customers, which should occur at the initial stages of R&D. Some part of existing science-technical developments of universities cannot be commercialized at the moment due to fulfillment incompleteness or advance of needs of home market, which is very conservative, as well as due to low technological level of enterprises. Simultaneously, there are developments of foreign firms, which are not always better by characteristics than analogues of home country, at the market, nevertheless they are ready to be implemented and have developed network of further services maintenance on the base of engineering companies. Important role in implementation of research activity results should be performed by establishments, which maintain contacts within spheres of science and business, in particular centers of technology transfer, incubators of academic entrepreneurship, and science-technological parks. Unfortunately, in Ukraine innovative environment infrastructure is not developed sufficiently, in particular full or partial absence of separate links is traced, and existing institutions fully or partially do not perform functions of stimulation and support of innovative activity.

In our view point, the problem of low entrepreneurship culture of home scholars is significant, that is substantiated by the lack of knowledge in the sphere of patent protection, marketing, and project management. Significant role is played by science and science-pedagogical staff of universities, which fear any risk. Taking into consideration the fact that the average age of scholars who work at universities is near 60 years old, they do not have the experience of work under market conditions and results commercialization was not a criterion of scientific achievement evaluation. The main goal of scholars' activities is to achieve scientific result, defense thesis, publish monographs, papers in rating journals and not to commercialize obtained results. Scholars' state salaries are significantly lower than in private structures. In modern society scientific work lost its popularity among the youth, who do not want to follow their teachers and only some of them continue researching, though entrepreneurship activity is not their life priority. The process is complicated by high workload, which is fulfilled by science-pedagogical staff of universities in accordance with valid legislation.

While establishing private enterprises, the scholars who are interested in entrepreneurship activity face a series of bureaucratic procedures, necessity to obtain a big number of allowing documents and long process of their approval, what in its turn do not support academic entrepreneurship and commercialization of scientific results. Hereby, information effect concerning complexity of fair business conducting under existing circumstances influence negatively upon entrepreneurship activity of scholars. The connection between science and business is practically lost. Both systems are indispensable constituent of successful functioning of country economics. Universities develop new technologies and enterprises improve technological processes of goods production, though it seems that these structures act autonomously, losing their joint point. Enterprises know a little about well-known developments and work directions of universities, and universities in their turn are not familiar with the problems of enterprises and create developments and technologies, which not always meet the priorities of economics and needs of regional market. In compliance with valid legislation not equal conditions are created at the market of science-technical services and high technologies for universities and private structures, and they are not in favour of universities, in Ukraine.

The question is unequal conditions of taxation, necessity to conduct tenders while purchasing materials and components, making payments via system of State Board of Treasury, etc. In practice it is more beneficial to implement R&D results through private firms, which offer advantageous work conditions and appropriate salary level. Hereby, intellectual property rights of universities are broken. In the case, ethical aspect concerning employer should be taken into consideration, as far as R&D results are obtained within working time and with the use of university facilities. Though. In Ukraine ethical aspects are disregarded by both scholars and entrepreneurs. Proposals concerning support of R&D results commercialization are presented below.

At legislative level it is reasonable to develop mechanisms to stimulate enterprises, which implement research results into productive activity. One of the ways to enhance taxation legislation is to lower tax rate for enterprises, which implement home technologies. To compensate budget receipts it is proposed to increase tax rate on import of foreign manufacturer's equipment, which have been used. Aiming at encouragement on the side of an enterprise to implement scientific developments, it is useful to establish appropriate articles on scientific research and innovations, which costs cannot be used for any other objectives. At regional level it is worth to support development of advanced experience centers in different areas, to provide consulting services, and round table organization for businesses. One more function of advanced experience centers is to consider the possibility of recommendation concerning sufficient financing of perspective developments to bring them to the attractive state for an investor, and the very process of funding should be conducted through specially established state funds for crediting. It is necessary to control severely the use of resources in the sphere of intellectual property; in particular to strengthen responsibility for illegal transfer of intellectual property rights and know-how by separate scholars to private enterprises in case of obtaining these rights that are funded by state costs.

To set closer collaboration between business and scholars it is worth to establish an information portal, which would represent topical production problems, which are to be solved, guarantying further results implementation on a contractual basis. This would allow to direct scientific research for topical industry problems solutions and enhance efficiency of costs, which are extracted by the state for R&D. Aiming at enhancement of entrepreneurial culture of staff, it is useful to develop the program of seminars, and prepare specialized courses in project management, marketing and financial activity bases. Building economics that is based on knowledge needs effective interconnection between science and business. Scientific developments should solve specific tasks, and technological know-how should be supported by state and manufactures. Existing-in-state model of fulfillment R&D is not directed for achieving ready-for-implementation result. Hereby, it is necessary to note that a part of fundamental research in scientific activities should stay high enough, because not all perspective researches can be estimated economic and applied rapid. The solution of problems series, which slow R&D results commercialization, needs quality state initiatives and events for every link in the system "science-business".

The establishment of technology transfer offices (Innovation offices) in the Ukrainian Universities is the factor that will contribute to the solution of the problems presented above and to more effective functioning "research-education-business" triangle.

RATIONALE AND INTENDED RESULTS

Significant criterion of successful up-to-date research university is the amount of costs obtained from implementation of technologies and developments into production. For most Ukrainian universities this index stays at significantly low level. Though annually in Ukraine a big number of R&D in establishment of nanotechnologies and nanomaterials, new technologies, alternative power source, and information technologies etc. is performed, main their part stays in form of reports, model samples, protection documents, which did not obtain appropriate commercialization. One of the reasons of such a situation is the lack of information in potential customers about these developments.

In leading countries of the world the question is dealt by the networks of technology transfer centers (Innovation offices), which possess information on market needs and are established in scientific establishments of technologies and developments, organize round table meetings between representatives of business and scholars, exhibitions, fairs, and provide services on issues of intellectual property protection, business-plan development, conducting audit, and by this support commercialization of R&D results.

Unfortunately, in Ukraine we have a problem of insufficiently developed infrastructure of such centers of technology transfer that is why searching of persons who are interested in implementation of scientific activity results is performed independently by the researchers. To foster the University innovation activity and to provide research result commercialization LPNU decided to create Innovation office. The process of creation of Innovation offices as well as facilitating factors and obstacles are described in this case study.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The stages of Innovation Office development were the following:

- Personnel selection
- Innovation office mission, objectives and strategies development
- Organization of pilot operations of LPNU Innovation Office.
- The main results of stages of LPNU Innovation office development are described in details below.

Personnel selection

The Selection of personnel to the LPNU Innovation office was conducted by the following procedure:

- Mode of advertisement of job opening: It was decided to look for the Head of the Innovation Office within the University personnel. The decision is based on the necessity to know the peculiarities of doing research at LPNU. Thus the Head of the Innovation Office was selected from the members of Research and Development Office. The information about the vacancy was spread among the members of this Office.
- Number of applications received and assessed: 20 people;
- Type of tests carried out (cognitive ability test, personality inventories, job knowledge test, essays, psychometric...): personal interviews were conducted;
- Additional comments on the process and the final outcome: the priority was given to the candidates knowledgeable in the area of technology transfer and university-industry cooperation.

As the result of the selection process the jobs were offered to four people who gratefully accepted them.

Strategy development

Officers of Innovation office, the representatives of the University management and the LPNU researchers were involved in Innovation Office Mission, Strategies and Objectives development. Mission, Strategies and Objectives developed for the Innovation Office of LPNU are presented below.

The Mission of the Innovation Office is fostering the innovation activity of LPNU, transferring results of research and technological development created by the scientists of LPNU into national and international markets, strengthening the development of local industry.

Objectives and strategies of the Innovation Office follow below.

Objective 1. Growth of University innovation activity

- Researching market needs in intellectual property objects, patenting scientific and technological developments, establishing license agreements and conducting technological audit directed towards finding out perspective scientific and technological developments and technologies. As the result of audit the commercial potential of the University scientific developments will be evaluated.
- Basing on the results of market research and audit the list of research fields (database) with the highest commercial potential will be developed.
- Maintaining and updating innovative project and technology database.
- Providing consulting services in forming technological proposals and requests.
- Preparation of bilateral and multilateral agreements between LPNU and other scientific and/or commercial institutions about cooperation in innovative technology development on national and international levels.

Objective 2. Attraction of national and foreign investments for accomplishing scientific research

- Assistance in innovative investment project implementation into Ukrainian and international markets.
- Searching for potential investors of innovative projects.
- Preparation of research catalogue (technology map) of scientific developments and technologies created by the scientists of LPNU both in Ukrainian and English languages. Placing and updating the catalogue at the web site of LPNU.
- Presentation of main results of fundamental scientific research at the website of LPNU.
- Promoting access to EU funding. Dissemination of information about EU funding opportunities for scientific research (7th Framework Programme, INTAS etc.).

Objective 3. Promoting patenting of scientific developments and technologies created by the University scientists

- Raising awareness on Intellectual Property issues within the University by conducting training for University researchers. The main information about Intellectual Property issues will be placed at the website of the Innovation Office;

- Advising the University scientists about legal issues on IPRs and patenting of their research results;
- Assistance in patent registration to the scientists of LPNU;
- Analysis the inventions in professional databases of science and technology information;
- Assistance in preparing correct patent applications;
- Monitoring possible Intellectual Property offences by the scientists of LPNU and scientists of other institutions towards the Intellectual Property that belongs to LPNU.

Objective 4. Dissemination of research results and technologies created at the University

- Spreading information about scientific and technological developments of the University (development of booklets and flyers, publishing catalogues of innovative developments);
- Participation and presentations at fairs, conferences, seminars, exhibitions and round tables for industry and other educational institution representatives;
- Participation in Ukrainian and international scientific networks.

The Innovation Office is going to promote the participation of LPNU in the National Technology Transfer Network (NTTN) which includes 30 non-commercial and commercial organizations. The main scientific results of the University scientists will be presented in the network. NTTN is a partner of the Russian Technology Transfer Network (RTTN) and it is expected that NTTN will become the partner of European Enterprise Network (EEN) soon. Such approach will permit the University scientists to get better access not only to Ukrainian but also to Russian and European markets.

Objective 5. Promoting University-industry cooperation and international science and technology cooperation:

- Establishment and development of partner relations with international scientific and commercial organizations aimed at commercialization and implementation of innovative developments. At this stage the University has a number of long-term agreements with scientific institutions from Germany, Poland, Bulgaria, Romania, Austria etc. The Innovation office will concentrate on further development of cooperation between LPNU research groups and research groups, companies and enterprise associations from foreign countries.
- Encouraging scientists to apply for grants of national and international funding institutions. At the moment scientists of LPNU have well-developed competences in applying and accomplishing scientific grants. In the same time the number of applications of the University scientists for EU grants is limited. To improve the latter trainings in EU research programme rules will be organized for the University scientists. The Innovation Office will be responsible for delivering information about the EU programme, invitation of relevant speakers, preparation of supporting materials etc.

Objective 6. Fostering commercialization of research results

- Development of the modern software search instrument permitting to find enterprises interested in purchasing University research results. The mentioned software instrument will be mostly based on information about prior contacts of

enterprises with LPNU researchers which is kept in out-of-dated databases. In addition the comprehensive survey of innovation interests of enterprises from Lviv region will be conducted.

- Creation of a Science Park of LPNU based on the existing Technological Park. The latter will foster the development of experimental products and their further commercialization.
- LPNU is a state organization and a part of Ministry of Education and Science of Ukraine.

Therefore all the mentioned objectives and strategies of Innovation Office will be directed towards achievement of the following two macro objectives:

- contribution to the governmental policy in the field of innovation activity and technology transfer.
- promoting economic development of Western Ukrainian region
- organization of pilot operations of Innovation Office.

Pilot operations of Innovation Office included organization of round tables with industry, information days for researchers, Innovation prize competitions and development of LPNU Technology matrix. The development of LPNU Technology matrix was the most complicated and important task of the officers of the Innovation Office. The process of LPNU Technology matrix development is presented below. Technological matrix of LPNU is the data base that comprises information on developments of scholars of university and scientific potential in different spheres of national economy (Figure 1 and 2).



Figure 1. Technological matrix of LPNU, the initial page



Figure 2. Distribution of research groups that work in nanotechnologies and nanomaterials, new materials and technologies by spheres of national economy

The main task of the matrix is contribution to setting relations between science and industry aiming at implementation of R&D results into production. The technological matrix of LPNU includes information on research groups of university, their main developments, scientific potential, available facilities, international cooperation, and experience of collaboration with industry. This information is distributed by research directions and spheres of national economy in accordance with application of developments in industrial sector (Figure 3).



Figure 3. Page with information concerning research group

Such form of information representation will contribute to searching of persons interested in

solution of certain scientific problems, scientific group cooperation both within university and with research groups of other establishments, in particular for fulfillment of interdisciplinary projects, setting contacts with real economic sector and opening new possibilities for commercialization of R&D results of university. Potential consumer obtains information concerning scientific development, completion stage and intellectual property rights for any development, and can convince in competence of scholars and existed experience of projects fulfillment.

For potential users search is available by key words, research directions, and/or spheres of real economic sector (Figure 4). Developed on-line system of sending interest allows representatives of industrial sector to contact directly with scholars (Figure 5).



Figure 4. Searching system of Technological matrix of LPNU



Figure 5. Online system of sending interests

It is worth to accentuate that developed technological matrix of LPNU comprises information concerning developments for final 5-10 years and will be permanently updated following creation of new technologies and formation of new research groups at university by the officers of Innovation Office. Establishment of similar data bases in other universities of Ukraine will enable launching interuniversity network as a new element of innovation structure.

RESOURCES REQUIRED AND USED

The financial and human resources required to organize the activity of Innovation Office of LPNU are summarized in the following table.

Resource Type	Estimated amount required per year (not only money)	Source of funding (university, national funding, international funding...) or source of development	How secure is it? (Secured – potentially secured – uncertain)
Staff costs	4 people* 300EUR*12=14440	University	Secured
	7 people* 300EUR*12=25200	University	Secured
Office space	1 office	University	Secured
Equipment	4 computers+2 notebooks+2 printers	EU grant	Secured
Money for printing	1000 EUR per year	University	Secured
Money for technological map development	1000 per year	University	Secured
Expertise in			

Communication with enterprises		University + EU grant	Still need to be improved
Legislation in IP protection		University	potentially secured
IP-protection issues		University	Secured
Application for international grants		University+ trainings conducted by international donors	potentially secured

FACILITATING FACTORS

The internal facilitating factors of Innovation Office development are the following (strengths):

- 1) Have support from University leaders and is a part of organisation structure. Vice-rector for science and vice-rector for international relations support activity and development of Innovation Office of LPNU
- 2) 4 people are employed by the Innovation Office full-time. The Head of Innovation Office was trained internationally in the University of Bologna. The Innovation Office has experienced personnel in IP-protection. Students of economic specialities have a chance to do internship in Innovation Office. They are engaged in writing business plans for innovative ideas developed by the scientists of LPNU.
- 3) Office has clear strategy and goals. The strategy and goals of Innovation Office were developed are based on a benchmarking analysis involving other Ukrainian universities and EU partner universities. The strategy and goals have been disseminated within LPNU so that academics are aware of opportunities which arise from cooperation with newly created structure.
- 4) The office has strong connections with local and national enterprises. The office possesses the database of current and past “University researcher – enterprise” projects. The Innovation office is currently searching for new sources of investment and new companies.
- 5) Strong scientific potential. A significant number of research results are published in national and international scientific journals.
- 6) A catalogue of scientific research was developed in English. The catalogue includes the personal information about the research groups and their contacts. A technological map of scientific research of LPNU was developed. The technological matrix includes main scientific results, fields and scientific groups.
- 7) The Innovation Office is one of centres for support of innovations in our region. The Innovation office has good links with the local government and other stakeholders.

The external facilitating factors of Innovation Office development are the following (opportunities):

- 1) New international projects and new clients emerges in Ukraine. In particular the attention should be concentrated on the possibility to apply for international grants.
- 2) The legislation concerning the innovation activity of the Universities might be changed soon. The Ukrainian universities are expecting adoption of the new Law About Higher Education in Ukraine.
- 3) The new funds to support scientific research might be established soon by the government. The Fund for supporting fundamental research was established recently.
- 4) The results of scientific research might be disseminated through the scientific networks.

LPNU is a member of National Technology Transfer Network (NTTN) and is going to participate in International Innovations Transfer Network (IITN) actively.

CHALLENGES AND OBSTACLES

The internal obstacles of Innovation Office development are the following (weaknesses):

- 1) Lack of interest from researchers to commercialize results through university structure due to the peculiarities of Ukrainian legislation system. The Ukrainian legislation does not encourage University research commercialization.
- 2) Criteria for evaluation of research results are not good. They are directed at the evaluation of the quantity of research not the quality of research.
- 3) Limited financing does not allow staff expansion. The economic crisis limits the University potential to give out additional finances for the development of Innovation Office. It was calculated that in order to work effectively 11 people should be employed in the office.
- 4) Lack of innovative companies willing to collaborate with universities. The activity of Innovation Office will be directed towards the attraction interests of enterprises to invest in scientific research.
- 5) Dissemination of research results is not efficient. The technological matrix needs to be finished and updated to foster dissemination of scientific results.
- 6) The University scientists are encouraged to publish not to commercialize the research results. The motivation system will be developed to encourage scientists to commercialize research results.

The external obstacles of Innovation Office development are the following (threats):

- 1) Flaws of laws in Ukraine. The University cannot be the establisher of spin-offs. However that might change if the new Law on Higher Education will be adopted.
- 2) The resources of the Innovation Office are partially diverted to activities of the R&D Office related to reporting to the Ministry. Lack of innovative companies willing to collaborate with universities. At the moment the Ukrainian economy is in crisis which results in limited recourses that they can invest in innovative projects.
- 3) Limited funding available to pass the gap from innovative idea to its development. The crisis in Ukrainian economy limits the access to financial resources.
- 4) Limited government funding for innovation activities and programs. The government does not provide funding for innovative research and commercialization.
- 5) Due to low salaries the university Innovation Office cannot attract qualified specialists in patent legislation. It is difficult to hire qualified lawyers due to the low salaries in Innovation office. The University cannot increase the salaries which are established by the Ministry.

LPNU cannot influence threats that emerge in external environment directly, primarily due to national legislation and acts of the Ministry of Education and Science. Thus external threats represent the main risks of Innovation Office development. However some of the external risks can be reduced in case of adoption of appropriate new Law on Higher Education in Ukraine. The representatives of LPNU which participate in the development of new Law on Higher Education in Ukraine support the idea of giving bigger autonomy to Higher Educational Institutions. The adoption of the new Law on Higher Education will permit to reduce the quantity of reports which are submitted to the Ministry by the Innovation Office. Such Law will also lead to bigger financial autonomy of the University (the decision to increase salary of particular University staff will be the University decision) and

will permit to the Universities to be the members of spin-offs.

The risk of possible decreasing financial resources will be addressed by promoting the participation of LPNU in international primarily EU projects. At the moment the Innovation Office staff is actively engaged in application for Tempus and CRDF grants.

The other possibility of increasing financial potential of Innovation office activity is strengthening the relationship with local industrial associations. The latter will permit to identify specific enterprise needs in the University research and attract additional financial resources to the University in case of successful cooperation.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Development of innovative structure is one of priority directions, determined by the Development Program of LPNU for the period up to 2020. Wide range of implementation of R&D work into industry is one of the main tasks, which are put forward for universities by the Ministry of Education and Science of Ukraine. In the context getting familiar with better work practice of innovation offices of European universities made possible heightening qualification of staff LPNU Innovation Office, obtaining skills of preparing proposals and advertisement materials, and collaboration with manufacturers as well as necessary work experience.

Development of technological matrix of the university allowed analyzing directions of R&D work and formulating priority directions of the university research, which have been approved by the appropriate decree of Ministry of Education and Science of Ukraine. Available information on scientific works of separate groups facilitated fulfillment of complex R&D projects. Four projects of the university scholars that are directed for production of new goods and implementation of new technologies, which have been obtained as a result of previous R&D work completion, have been included into the State Program of Boosting Economics Development for 2013-2014.

Unfortunately, not all skills can be applied today in Ukraine. The reason is difference in the legislation, in particular lack of opportunity of university to be a founder of new enterprises, availability of financial resources for implementation, and keeping legislation in the sphere of intellectual property protection. Lack of interest of enterprises for new goods production and significant difficulties while testing and certifying new developments is not favorable as well.

SUSTAINABILITY OF THE GOOD PRACTICE

To ensure sustainability the Action plan for LPNU Innovation Office till 2015 was developed. The main ideas of LPNU Innovation Office Action Plan till 2015 are summarized in the following table.

Nr.	ACTIVITIES	TIMING	TASKS TO SUPPORT THE ACTIVITIES	RESOURCES NEEDED
1	Improvement of University innovation-related activity	Permanent activity (ongoing) The technology database is	<ul style="list-style-type: none"> Maintaining and updating innovative project and technology database (on-going task, already 	Personnel of Innovation Office (Expertise in innovation databases) Personnel of legal department of LPNU

		going to be updated two times a year.	<p>organized).</p> <ul style="list-style-type: none"> • Providing consulting services in forming technological proposals and requests. (on-going task) • Preparation of bilateral and multilateral agreements between LPNU and other scientific and/or commercial institutions about cooperation in innovative technology development on national and international levels (on-going task). 	(Expertise in preparing the agreements)
2	Attraction of national and foreign investments for accomplishing scientific research	Permanent activity (ongoing)	<ul style="list-style-type: none"> • Searching for potential investors of innovative projects. The staff of Innovation Office is planning to apply for the grant of CRDF to develop regional Innovation Office in Lviv region (on-going task). • Presentation of main results of fundamental scientific research at the website of LPNU. (on-going task) 	Personnel of Innovation Office (Expertise in application for international grants) Personnel of International Relations office of LPNU (Expertise in application for international grants) Research results of LPNU scientists Representatives of national and international organizations that are giving out grants to make presentation to scientists of LPNU
3	Promoting patenting of scientific developments and technologies created by the University scientists.	Permanent activity (ongoing) The main information about Intellectual Property issues will be placed at the website of	<ul style="list-style-type: none"> • Raising awareness on Intellectual Property issues within the University by conducting training for University researchers (three info-days per year). • Advising the 	Personnel of Innovation Office Personnel of legal department of LPNU (Expertise in IP protection) Research results of LPNU scientists

		the R&D Office by the end of the year.	University scientists about legal issues on IPRs and patenting of their research results (on-going task). <ul style="list-style-type: none"> Assistance in patent registration to the scientists of LPNU (on-going task). 	
4	Dissemination of research results and technologies created at the University	Permanent activity (ongoing) The catalogue will be developed once per year. The final schedule of exhibitions and fairs are developed by the end of March every year.	<ul style="list-style-type: none"> Spreading information about scientific and technological developments of the University (development of catalogues of innovative research). Participation and presentations at fairs, conferences, seminars, exhibitions and round tables for industry and other educational institution representatives. Participation in Ukrainian and international scientific networks (IITN, NTTN, EEN). 	Personnel of Innovation Office Financial resources for printing booklets and flyers
5	Promoting University-industry cooperation and international science and technology cooperation	Permanent activity (ongoing)	<ul style="list-style-type: none"> Establishment and development of partner relations with international scientific and commercial organizations aimed at commercialization and implementation of innovative developments (on-going task). Encouraging scientists to apply for grants of national and international funding institutions (two 	Personnel of Innovation Office (Expertise in application for international grants)

			seminars per year will be conducted).	
6	Fostering commercialization of research results	Permanent activity (ongoing)	<ul style="list-style-type: none"> • Development of the modern software search instrument permitting to find enterprises interested in purchasing University research results (till the end of the year). • Creation of a Science Park of LPNU based on the existing Technological Park (in two years). 	Personnel of Innovation Office IT department of LPNU (Expertise in development of Internet databases) Technological park of LPNU

TRANSFERABILITY OF THE GOOD PRACTICE

1) It is reasonable to separate the group of intellectual property right protection and the group of marketing research and development advancement into the market. The Innovation office staff need to deal with developments from different spheres and this is why it is necessary to form different strategies of introduction into the market. This demands special skills and knowledge (experience of appropriate centers in the USA show that specialists with education of two directions (one of which is technical, and the other – economic or juridical) suit the best an employer). It is worth to attract students, who can conduct marketing research, develop proposals on advertisement developments, and implement advertisement booklet design etc., to working at Innovation offices.

2) Develop university technological matrix, which enable establishing relations between groups of scientists and demonstrate priority directions of university research. To collect information that will be represented in the technological matrix it is useful to apply a special form that is filled in by leading scholars – supervisors of scientific groups. The form should comprise information that would confirm the level of scientific achievements of a group as well as experience of previous development implementation. Technological matrix should be available to be got familiar with and predict opportunity of updating information, and have convenient searching system.

3) Prepare a catalogue of university developments and form proposals to be placed in networks of technology transfer, that allow advertising scholars' R&D work results efficiently and contribute to spreading information on developments in entrepreneurs' environment.

Hold round table meeting with entrepreneurs of a region to set collaboration and determine topical problems, which they are interested to solve. This will allow to formulate research directions precisely and provide the opportunity of further implementation of obtained results

4) Develop the system of events concerning stimulation of scholars to implement obtained results, provide acquirement of intellectual property rights on developments, obtained by

staff during fulfillment their position duties, by the university, and funding developments at the stage of their introduction into the market. In case a developer is not interested, the indicated above events would be ineffective and it makes impossible full functioning of Innovation office.

LESSONS LEARNT AND RECOMMENDATIONS

Established Innovation office operates quite well. The Innovation office staff assist in execution of intellectual property right protection for university scholars. For the last year it has been obtained over 80 patents of Ukraine. The work on training and placement of technological profiles and inquiries in the national network and established interuniversity network of technology transfer, which was established as a result of the project implementation, has been set. In education-scientific institutes the analysis of R&D work results is being conducted aiming at selecting developments that are perspective for implementation. Several round table meetings have been held with representatives of housing and communal services, which enabled specifying range of problems and to solve them the complex research-development project is directed. The work concerning filling in the technological university matrix is being continued.

The work with potential customers demands further development. Unfortunately, existing situation in Ukraine does not stimulate industry to fund R&D works and their results implementation. The urgent need is establishment of data base of developments and technologies, which the enterprises of a region are interested in. Exactly in the direction the further efforts of Innovation office will be directed. In particular, by the Resolution and a proper Decree of the Rector of the university it has been pointed at the necessity of boosting collaboration with manufacturers and entrepreneurs, who have been obliged to develop appropriate plans of events for 2013-2014, which should anticipate advertising of existed developments, conducting thematic round tables meetings with directors of enterprises to discuss opportunities of research completion by orders of industry and implementation of ready developments.

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24. Analyzing the Outcomes of the International Young Investors Project Olympiad in Tbilisi

International Black Sea University, Georgia

EXECUTIVE SUMMARY

This study examines the outcomes of organizing international young inventors project Olympiad in Tbilisi, Republic of Georgia. International Black Sea University has been playing a key role in the organization of this productive event. The study covers the challenges faced in the introduction of the event, elaborates on the issues in wider context, mentions the rationale and intended results, provides detailed information of the implementation process, the funding and human resources utilized for IYIPO, reflects on the sustainability of the event, and offers insight into lessons learnt, and recommendations.

BACKGROUND INFORMATION

Founded in 1995, International Black Sea University (IBSU) has been striving to train local and international students in scientific, technical and professional fields of study, and utilize these studies in the field of pure and applied research for contributing to the economic and social necessities of Georgia and other developing countries. Since its inception, the language of instruction has been English. It is located in Tbilisi, the capital city of Georgia.

The opening ceremony of IBSU was attended by the President of Georgia and the Prime Minister of Turkey of the time, and was realized in accordance with the decree of the Council of Ministers. It was licensed by the Ministry of Education of Georgia in 1995. The founders of University are the Ministry of Education of Georgia, the Governorship of Dusheti, and the Turkish firms 'Mars' and 'Chaghlar'. At the moment Control Ltd and Simsek Ltd are shareholders of IBSU. The first commencement was consisted of 31 students only, whereas now IBSU enjoys a student body of about 2000 producing more and more graduates each year.

IBSU offers more than 45 programs in bachelor's, master's, and doctorate levels with more than 150 teaching staff.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

The type of the modernisation process can be called a "blended" one, consisting of the following topics:

- Internationalization;
- Competition among higher education institutions in Georgia;
- Public funding and other financial resources;
- Involvement of students in curriculum development;
- Irrelevance of graduates' skills to labour market needs;
- Students drop out;
- Weak links between education, research and innovation;

- Increasing use of ICT in education.

These challenges may obviously be perceived as common ones that a great number of higher educational institutions face worldwide. In IBSU's case as well there was need for internationalization, finding different sources of funds, update in curricula, meeting the market needs, producing strong ties with the society, and increasing the use of technology in teaching.

THE WIDER CONTEXT

In order to overcome the issues mentioned above, the board of trustees, the administrative board of the Chaglar Educational Company that has several high schools countrywide, and the top administration of International Black Sea University held a series of meetings. One of the strategic decisions that came out of those meetings was to organize a project Olympiad under the title of "International Young Investors Project Olympiad (IYIPO)". There were several elements triggering this decision.

Internationalization

Internationalization is an important aspect of HEIs worldwide as they inevitably need to go through the process of an increasing involvement in international context in reaction to changing global demands. The universities cannot help but addressing the issue in terms of recruitment of international students, international faculty, joint educational programs, research networking, and benefiting from funds available to consortiums composed of HEIs that come from various countries. Internationalization recently became a factor in the evaluation of a HEIs reputation, ratings, and rankings. This may be why some HEIs offer numerous incentives for international staff to teach and do research in their institutions in order to increase the impact of internationalization in the ratings and rankings.

Having the word "international" in its name, IBSU has been aware of the fact that one of its missions should be to handle the issue of internationalization with all its aspects. The initial meeting, therefore, addressed the following actions to be taken in due course:

- working towards increasing in the number of international students significantly;
- working towards increasing the number of international faculty;
- setting up joint / double degree programs to the extent that is allowed by the legal context in Georgia;
- seeking international funding opportunities in order to escalate research output, and expand the network;
- establishing links with HEIs abroad for student and staff mobility through memorandums and grant opportunities.

Competition Among Higher Education Institutions in Georgia

The word 'private' was accompanied by an inferior tone in the Soviet times. This kind of psychological attribute did not considerably help the private universities after the collapse of the Soviet Union. In those times, if an institution was 'state', it was 'good' by default, and if it was 'private', it was subject to suspicion. One cannot deny the fact that more than 200 universities in a small country such as Georgia did not contribute to the reputation of private universities at the beginning, either. There were obviously some diploma mills, which were thankfully closed down soon by the state initiative. There are 43 universities countrywide at

present, out of which 26 are private.

More than 30000 students are admitted to higher educational institutions every year. The number does not look significant when compared to more crowded countries; however, it does not prevent 43 universities from competing with each other. Georgian people do value education, and while choosing a university, they naturally pay attention to fine details in the programs of their choice that would help find jobs. The universities, on the other hand, are striving to recruit the best students possible to make the task of helping their students secure fine jobs easier.

Public funding and other financial resources

Private universities in many countries do not receive funding from the state, however, in the Georgian case, this has become an exception, (although there are currently signs that the public funding opportunity introduced only a couple of years ago, private institutions may be left outside the group of beneficiaries soon.) The fact that the state has recently started to fund high-achieving students in the programs of their choice has initiated another dimension of the competition among both private and public universities. The universities have embarked on new strategies that would attract bright students to their universities, surely together with their funding provided by the state.

On the other hand, the global economic crisis has been a substantial factor in the fluctuation of the financial support that the Board of Trustees IBSU has shouldered so far. The initial support that they have provided is likely to fade in time as they would like to see IBSU developing and applying its own strategy to 'stand on its feet'.

Involvement of students in curriculum development

Through EU grant projects, and the modernisation processes at the Ministry of Education and Science, the students have become more successful in making their voices heard. The students, undeniably the most important actors in the educational process, now have the right to be involved in the decision making process, and thus in curriculum building. The universities would surely like to see the best students to join in this arduous task of curriculum development, and therefore recruit students with a scientific vision. The most common strategy is to select the best students who became successful in international science Olympiads as they are believed to have acquired the skills of team-work, presentation, social, and self-learning.

Irrelevance of graduates' skills to labour market needs

With very little development in industry and other major business areas, young Georgia has been in need of qualified people in all walks of life. The Soviet tradition did not leave much room for handling the competition for employment, because graduates would be 'placed' in job positions by the state in the past. Therefore, the universities need to find out the needs of all the stakeholders in the educational process, and address those needs by updating the curriculum accordingly. Recruiting bright and promising students is undoubtedly the priority of the universities to secure effective output, i.e. graduates.

Conversely, the labour market itself has been looking at the issue of collaborating with universities with hesitation in the country. Therefore, it is challenging to prepare both sides to cooperate on producing the right type of graduate for the benefit of both parties.

Students drop-out

Motivation and the self-learning skill are crucial factors for success. Unmotivated students most likely will not listen to advice coming from the teaching body; hence, they need role-models within the student body. Another challenge is the fact that attendance is now not obligatory in Georgia. The wisdom behind this decision is to allow the young generation to be able to work to support their families. The drawback of the decision, however, is the formation of a group of students who lack interaction with the lecturers, and thus are deprived of the gist of teaching and learning.

Increasing use of ICT in education

The modern teaching and learning process requires the use of ICT in education as:

- the 'information' is renewed faster than ever;
- the role of lecturers have changed from 'teacher' to 'facilitator' in time;
- use of ICT looks to be the best and cheapest way to introduce authentic materials.

The students have the challenge to be able to select from a very wide range of available materials in terms of ICT, whereas the faculty face the challenge of adapting their teaching style into a new one that heavily involves ICT. The more the students demand their lecturers to implement ICT into the syllabus, the more prepared the lecturers will be for the lectures, and raise the level of quality offered in the educational institution.

RATIONALE AND INTENDED RESULTS

We have chosen to introduce the organization of International Young Inventors Project Olympiad in this study in order to make the positive outcomes of the event evident. IYIPO has been organized for 7 years now. European Union, the state television company, and a great number of large-scale companies support the organization of science Olympiads in Georgia. The Olympiads bring very bright students together, and more often help them secure a place in the university with no or discounted tuition fees.

The participating students of IYIPO form the grounds of confronting the challenges mentioned in 4.1 – 4.7; that is, if they choose to study at IBSU, we wanted them to help the university with:

- taking a natural role in promoting IBSU;
- taking part in international mobility, exchange, and project activities;
- bringing their public funding to the university, thus funding their own education;
- contributing to the curricula development;
- developing and being a role model in developing the required skills for the labour market;
- helping to decrease the number of students dropping out by triggering the will to learn and being a role model for other students;
- increasing the level of demand from the lecturers for more quality education;
- translating theory into practice;
- developing a sense of critical analysis in experiments;
- contributing to the welfare of Georgia by producing skilful graduates;
- raising awareness in intercultural dialog and world peace through the experience(s) they have gained in the international Olympiads organized.

The Olympiad started at the national level, and included Turkey where the IBSU founders come from. The following table depicts the number of projects, participating countries, sponsors and the distribution of medals since 2007.

Year	# of Countries	# of Projects	Sponsors	# of Medals		
				Gold	Silver	Bronze
2007	2	34	Patent Office, NT	5	10	15
2008	11	45	Patent Office, NT	8	10	15
2009	15	54	Patent Office, Geocell, EU, NT	10	15	20
2010	17	68	Patent Office, Geocell, EU, NT	12	18	25
2011	22	102	Patent Office, Geocell, EU, NT	15	25	45
2012	25	110	Patent Office, Geocell, EU, NT, TV1	20	30	50
2013	27	142	Patent Office, EU, TV1	20	30	50

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

The foundation of IYIPO dates back to the times when science fairs were organized by Private Demirel College, and Refaaddin Shahin Friendship College to promote interest in science among high school students. The General Directorate of Chaglar Educational Institutions, willing to take the science fairs one step ahead, started talks with International Black Sea University, in order to convert the science fairs into science Olympiads. The first Olympiad was held at national level, and starting from the second one, they were held at international level under the title of International Young Inventors Project Olympiad.

Mission

The mission of IYIPO was outlined by the founders as follows:

- Encourage the young generation to exert their vision, passion and creativity on scientific innovations that can make a positive diversity in today's world;
- Speed up the progress towards a world that is explored to a greater extent by engaging youths at an early age;
- Contribute effectively to the growth of the quantity and the quality of the inventors from the young generation.

Vision

The IYIPO unites the best young inventors, showcasing their talent at an international stage, enabling them to submit their work to judgment by high level scientists, providing the opportunity to compete with their peers gathered from all over the world and ministering to promote intercultural dialogue and collaboration.

General Regulations of IYIPO

The following are the general rules of the International Young Inventors Project Olympiad. Application deadlines and the Olympiad dates are announced on the web site each year.

Projects of Mathematics, Engineering, Information Technologies, Chemistry, Biology and Physics may apply for the competition.

The Olympiad is open to all international and Georgian students who are studying in grades 7 to 12.

Students may compete with only one project each year. A maximum of two students may present a project. IYIPO Organization Committee will provide accommodation (at host

families) and food for the competitors and supervisors for free. All travel expenses to and from Tbilisi must be covered by the participants themselves. All competitors have to communicate in English well enough to present their projects.

Project stands will be provided for each project in the exhibition hall. Extra materials related to the project must be brought by the participants themselves. Project stands contain two parts: display table and display board. The models or applications can be displayed in the table while the posters or printed information are shown on the board.

The Organization Committee holds the rights of changing rules without prior notification. The stands for the exhibition will be provided by the IYIPO Coordination Centre. Measurements of the stand: (The body part: 120x80 cm) (The table part: 120x52 cm).

Evaluation of Projects

The evaluation system is as follows:

Scientific Part

Comprehensibility of the project (5 points)

Appropriateness and sufficiency of the data collected (5 points)

Suitability of the methods used (5 points)

Evaluation of the data (5 points)

Consistency of the aims and results of the project (5 points)

The diversity and use of the resources (5 points)

Practical application of the projects; benefits for society in certain ways (25 points)

The originality of the idea that is emphasized (25 points)

The practicability of the results (20 points)

Benefits

Prospective students start to prepare a great number of projects months earlier than the Olympiad date, and compete for the finals. The projects are first shortlisted within the country, therefore creating a truly competitive atmosphere in the corresponding country. In the Georgian case, for instance, there are more than 100 projects submitted for application in every year, meaning that the diversity of the participating schools and the nature of the projects is beyond expectations.

The state officials express their gratitude for taking the task of funding off their shoulders by involving distinguished sponsors for the event. The Georgian Patent Institute contribute to the event by providing respected jury members. Another point is that the jury members also play the key role in determining which projects can be further supported for the benefit of the Georgian society, and the Institute funds the selected ones at state level.

The projects also help the teaching staff of educational institutions see the need for curriculum development. They both encourage the staff to tailor the curriculum according to the emerging needs, skills, and technologies, and show the way how to accomplish the task. The Olympiad also contribute to the formation of modern teaching techniques for 'gifted' or highly skilled children by foundation of study groups in and outside the classroom. It is a positive sign to see that the International Young Inventors Project Olympiad has risen the competition level and brought another dimension to quality among the best schools in

Georgia, as well.

The preparation process itself is a very educative one, involving critical thinking, problem-solving, and optimization in 6 basic fields of science, which takes the participating students beyond the boundaries of a typical high school curriculum. The expertise will undeniably put the students one step further when the time comes for seeking employment. The projects prepared by bright Georgian students make us assured about the positive consequences mentioned above. We believe the international case is not different from the Georgian one.

The project participants are self-motivated students, a characteristic which leads them to success in their higher education life. We have met few students among them who do not like doing extra work outside the class, but they at least do not fail in the examinations. This fact demonstrates how important it is to blend sound fundamental background knowledge with the new materials presented in class. Another positive result is for the average or low-achieving students in the same classroom environment. Those students who lag behind usually become more motivated by taking the Olympiad participants as role-models. The impact factor increases when the Olympiad students are invited for peer-coaching outside the class. The involvement also reinforces the Olympiad students' knowledge while teaching a subject or helping the other students understand what they lack.

ICT is an indispensable part of the Olympiad process. The projects cover a wide range of subjects including Physics, Chemistry, Biology, IT, and Mathematics. The aim is to carry out research in these fields and come up with results using one or multiple disciplines. The impact factor of the presentations increases if / when ICT is used in project presentations as well. Therefore, the students feel themselves obliged and self-motivated to learn about the latest developments in software, and most of them find themselves in various levels of computer programming. ICT also makes it easier for the students to produce reports, carry out analyses, and produce relevant presentations.

The students not only use software to develop their projects, but also have to deal with hardware if their projects involve electrical and electronic equipment. Hence, the students need to develop a fundamental understanding of how the electronic components work in order to come up with an innovative solution and be able to present not only the results but also the theoretical background of their projects. The heavy involvement of ICT in projects act like a driving force for the educators to deepen their own knowledge in ICT, resulting in a win-win situation for the quality of education.

The event triggers the motivation to learn and contribution in science, and imbues the participating students with the desire of becoming a worthy citizen of the society. IYIPO acts like a bridge between the HEIs, high-schools, the Ministry of Education and Science, and the labour market in order to promote a common understanding of challenges and needs of the overall education in the country.

The event lets the students be acquainted with Georgian culture, as well as make friendships with other participating international students, therefore help raise awareness of intercultural dialog, an issue that all the educational institutions need to deal with for a brighter future. IYIPO also maintains a platform for the young inventors who do not have the chance otherwise to work and exhibit valuable intellectual work.

RESOURCES REQUIRED AND USED

The funding required for organization and accommodation came from:

- International Black Sea University;
- European Union;
- Geocell;
- Chaglar Educational Institutions;
- A set of Georgian TV Channels;
- National Intellectual Property Centre;
- and several other companies and institutions depending on each year.

In terms of human resources:

- IBSU staff;
- Staff from 7 schools affiliated to Chaglar Educational Institutions;
- Jury members from about 20 universities;
- Representatives from the Ministry of Education and Science;
- National Intellectual Property Centre;
- Georgian Patent Institute.

FACILITATING FACTORS

The following factors made the implementation process easier:

- The international identity of IBSU;
- Similar educational backgrounds of the project participants from over 30 countries;
- Students' openness to cultural exchange;
- Contribution from experiences teachers / lecturers;
- Support from sister institutions;
- Well-defined vision and mission of the organizing institutions that allows the allocation of funds to the event;
- Well-motivated staff;
- Governmental support to the event;
- President's participation in the first Olympiad and his involvement in the award ceremony;
- Sponsorships from renowned companies;
- European Union's sponsorship in presenting laptop computers to students, and actively participating in the event with representatives;
- Creating a website for the event;
- Participating students' satisfaction and their encouragement for the other students to participate in the event;
- Holding the closing ceremony at the conference hall of the Ministry of Education and Science;
- Holding the project exhibitions in nice halls at hotels.

CHALLENGES AND OBSTACLES

Funding can be stated as the first major obstacle in the organization of IYIPO. The initial events were held by the university and Chaglar Educational Institutions with very few sponsors from the country. However, the number of sponsors increased in time, and helped remove the obstacle of finance.

There are many examples of IYIPO throughout the world, therefore another challenge was to attract students to participate the IYIPO in Georgia. A group of staff had to work hard in order to publicize IYIPO, and contacted many institutions in the world for this purpose. Surely, individual contacts played a great role in today's success. Now, IYIPO can be considered as a science event that has a certain level of reputation in more than 30 countries, and the number of participants increase year by year.

Selection and involvement of jury members was another challenge. A group of highly qualified university staff was addressed for this purpose based on their areas of expertise. The group members were naturally busy people, but the organizing committee managed to hold preparatory meetings to make sure the evaluation of the projects go smoothly. The organizing committee also targeted at introducing Georgia and Georgian culture to the project participants. This was a challenging task to accomplish within 4-5 days. The last-day tour projected was obviously not enough to introduce Georgia. Subsequently, parents from Chaglar schools were contacted to seek volunteering families who could host the international students at their homes. Thanks to the Georgian hospitality, many volunteering parents showed interest in hosting the students. Their commitment to introduce the Georgian way of life, typical family culture, food, and other elements of the Georgian tradition has to be appreciated.

One Example

The following case demonstrates the significance of the attention paid to the human factor in the organization of the event, and how people can develop strong ties within a very short time:

The father of the host family gives pocket money one day to his son and the student who they host during the IYIPO. The international student becomes so happy upon this act that just before his return to his homeland, he tells the family that his mother and father had been divorced, and he never received pocket money from his father before, and that he will keep the money offered to him forever. He also says that he will start being the honorary ambassador of Georgia in his home country as soon as gets back.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

Organization of IYIPO opened a new gate for reaching out to high school students both from Georgia and the international arena. It acted like an indirect promotion of the university to successful students. Therefore, IYIPO can said to be an innovation in the PR work of the university.

SUSTAINABILITY OF THE GOOD PRACTICE

The 7th IYIPO was held in April, 2013, with an ever-increasing number of participants each year. The organizing committee gets together regularly throughout the year to discuss pending issues and the plans for the forthcoming IYIPO. Most of the participating institutions are likely to participate in the event again in the subsequent years. Furthermore, IYIPO receives new applications every year as well. The IBSU strategic planning favours the growth of the event, as well as the view of the Chaglar Educational Institutions. We believe that the organization of IYIPO will follow a growing trend in the years to come.

TRANSFERABILITY OF THE GOOD PRACTICE

We can surely assert that the practice can be applied by other HEIs, too. The involvement of a higher educational institution in a science Olympiad for high school students will be received as a sign for objectivity in organizing the Olympiad. Furthermore, the HEIs would stand a better chance in contacting governmental offices, schools, NGOs, prospective sponsors, and the like. The universities will definitely find the evaluation part easier, can assess the value of a project, and make any promising project into a tool that is beneficial for the society. The promotion of the universities is another positive outcome that should be noted here.

LESSONS LEARNT AND RECOMMENDATIONS

Lessons learnt:

- The organizing committee should work on the diversification and the number of sponsoring companies;
- The committee should work on international participation more while not forgetting about the participation of national schools;
- The committee should pay attention to geographical distribution of the participating institutions in the country and pay attention to promoting the event in the areas that might have not shown interest so far.

Recommendations:

- The event should also be utilized as a means to determine the labour market needs by involving more CEOs and directors of leading companies;
- Involvement of other higher educational institutions in Georgia may help broaden the scope of the event, and reach out to more students;
- The organizing committee should not ignore the funding necessary for the organization, and work more on the issue by reaching more companies.

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25. Public-Private Partnership “Development and Modernisation of Students Accommodation Infrastructure”

Moldova State University, Moldova

EXECUTIVE SUMMARY

The experience in solving the problem of modernisation of MSU (MSU) student dorms by establishing the first public-private partnership in education will be presented. The need to attract a private partner to renovate student dormitories derives from finance resource deficit faced by public universities in Moldova. The budget of public universities is carried out on account of two categories, basic fund - from the state budget and special funds (extra budget spending).

Although demand for university education increased, the allocations from the state in higher education have declined, as has the share of the allocations for education in general. The state cannot provide full coverage of the needs of the university system, but supports the principle of studies accessibility by various centralized financial management mechanisms, including tuition fee capping. These actions significantly affect the possibilities of universities to increase their extra-budgetary funds.

It is obvious that most of the problems associated with under-funding of higher education are relevant as it affects the quality of education and overall university performance. Financial difficulties determine the precarious situation of university dorms. According to Government decision No. 99 of 30 January 2007, maintenance and repair of the student dormitories is the central authority's obligation and not of the universities. However, universities are forced to spend significant sums to keep them in functional state. According to estimates of the Ministry of Education, 13% of the costs of current maintenance of dormitories are paid by educational institutions. But this expenditure is not enough to ensure decent living conditions in student dormitories.

Being aware that the image of MSU both nationally and internationally (taking into account the intensive cooperation with EU universities) largely depends on the conditions of life in the dorms, but also being unable to ensure their modernisation from its own financial resources, the university leadership decided to initiate a project to establish a Public-Private Partnership (PPP) for renovation of student accommodation infrastructure. The steps made by MSU to initiate the project of establishing the PPP, and actions taken to obtain approvals of state institutions for this project will be presented.

BACKGROUND INFORMATION

MSU was founded on October 1, 1946 as the State University of Chisinau. The MSU is a classic type of institution and its noble mission is to offer quality education and training of highly skilled specialists. In May, 2005 MSU adhered to the Bologna Process and Lisbon Convention. It has facilitated the mobility of students, graduates and academic staff, has prepared students for their future carriers and the life of active citizens in a democratic society, has supported their personal development, and has offered wide access to the higher education of the superior quality, based on democratic principles and academic freedom. Thereby, the MSU became the first student-centered institution in the country.

Since July 20, 2006, MSU has become a profile member of the Academy of Sciences of Moldova. Today, the University has over 100,000 graduates of various faculties and specialties. During all these years the MSU has prepared the biggest part of the intellectual elite of the Republic of Moldova.

At present, MSU is one of the most important higher education institutions in the country. It has around 16,000 students who study at over 59 Bachelor, 73 Master and 66 doctoral programs at 14 faculties. The educational process is guided by academic staff of 1134 including 8 academicians and corresponding members, 90 professors / doctors habilitatus, 364 associate professors /doctors of science. Currently, MSU has highly qualified technical staff and a well-equipped material base, which provides a friendly atmosphere and qualitative studies.

MSU is known worldwide in the area of higher education and is integrated into a strengthened international cooperation network, having concluded about 110 bilateral cooperation agreements with institutions of higher education from 28 countries. At the present time MSU is a member of the International Association of Universities (IAU), Agence Universitaire de la Francophonie (AUF), and the Eurasian Association of Universities (AEU).

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

Decreasing public funding and limited financial resources

THE WIDER CONTEXT

National Development Context

Since the declaration of independence in 1991, the Republic of Moldova has undergone a series of difficult transitions with enormous social costs. The first decades of independence were also marked by political instability and deep economic recession. In 2013, Moldova is a country still in transition and in the midst of numerous reforms of its public institutions, legislation and policy agenda. Economic recovery in 2010 and the potential opportunities related to the European Union integration have created propitious environment for modernisation and positive changes in the Republic of Moldova.

Political Context

The complexity of the continuous democratic transition evidently resumes from the fact that during 2007-2011 the electoral exercise was annually held in Moldova at least once. The failures in presidential elections during the years 2009-2011, have created over this period

significant political uncertainty. Improvements in the management of electoral processes brought some stability to the political context. Since 2009, despite the frequent elections the electoral processes in the Republic of Moldova have managed to maintain credibility. This helped to reaffirm the democratic process and strengthen the national stability during frequent political changes. The presidential election succeeded in 2012.

Demographic Trends

The number of population of the Republic of Moldova has decreased by 2012 to 3,559,500 inhabitants (without counting the population of the left side of the Nistru and Bender municipality), following a downward trend that started to emerge in 1990. One cause of this phenomenon is the negative natural growth and subsequent effects in increasing aging coefficient that recorded a rise from 12.8 in 1990 to 14.4 in 2011. This highlights the fact that the Republic of Moldova is a part of the general trend of aging population that many countries also face, with all the implications that this phenomenon has in the education sector development.

Economic Trends.

The Republic of Moldova has been through a difficult transition period, with a cumulative decline in gross domestic product (GDP) of about 66% between 1990 and 1999. Since 2000, the economy of the country has recorded a growth trend, reaching 2000-2008 real GDP growth of about 75.6%, but mainly due to external factors. However the Moldovan economy proved to be vulnerable to the 2008-2009 crisis, returning to growth in 2010. Over the last decade the economic growth was driven mainly by remittances that boost domestic consumption by the export as well. In 2011, the Government's persistent efforts to reduce budget deficits and stabilize the economy were supported by the International Monetary Fund (IMF).

With the external budgetary support the economic growth began faster than expected. However, the country still has not fully recovered from the negative impact of the 2008-2009 global financial and economic crises, with severe budget constraints at the national and local levels. In the past two years, the Republic of Moldova has experienced a period of economic recession, which led to stagnation and poverty reduction, the second consecutive year, poverty is increasing in rural areas where 80% of the poor live in the country.

Education

According to Education Indicators in 2009-2011, the overall gross enrollment rate in education increased on both levels / stages of education and age categories. A slight increase in the quality of education, reflected in student performance on national and international levels was recorded (the number of students who obtained awards at international Olympiads and those endowed with modern skills: language skills, computer knowledge, and the ability to take decisions increased). The effectiveness of educational services enhanced: the promotion of the interactive teaching technologies, application of ICT in education, etc. At the same time, the access to education and quality do not meet to the full extent the national and European standards. Currently, education in the Republic of Moldova is in a process of transition from a traditional, mostly informative, and centralized to a modern, dynamic, formative, and student-focused on students education which is specific for a democratic society, based on an economy market.

Higher Education

By the academic year 2011-2012 the higher education system in Moldova comprised of 34 higher education institutions (HEIs), including 19 state institutions subordinated to the Ministry of Education (ME) and some other ministries and 15 private. According to ME in 2011 the total number of students involved in higher education was 103,956. At the state institutions there are about 84 946 (81.7 %) students and at private institutions there are about 19 010 students (18.3 %).

The basic difference between public and private HEIs is in the source of financing: public HEIs are funded from the state budget while private ones are self-financing. For the rest, all HEIs must follow the national regulatory framework regardless the type of ownership. State owned HEIs have an admission plan established by the government. For private HEIs the Ministry of Education sets some restrictions regarding the number of students enrolled per specialties. Full-time students in the first cycle represent 71 % of the total, while part-time students make up 29 % of the total. The share of women in higher education is about 56.3 %.

Moldova joined the Bologna Process in 2005, when there were made several reforms in higher education: restructuring of higher education in two cycles – licentiate (cycle I) and master's (cycle II), the introduction in all the HEIs of licentiate (cycle I) and master's degree (cycle II), development and implementation of a new nomenclature of training fields and specializations for professional development. However, since the doctorate has not become the third cycle of higher education in the Republic of Moldova the reform process of higher education has not ensured the full compatibility with the Bologna Process. Also the lack of control structures and national quality assurance at the national level is a problem for higher education. The accreditations that currently benefit educational institutions are still made in 2005 by the department that already no longer exists.

The current situation in higher education is characterized by partial autonomy, enshrined by granting freedoms in various fields. Regarding the organizational autonomy, the autonomy of human resources and academic autonomy in the Republic of Moldova some progress has been achieved. In terms of organizational autonomy, the universities from Moldova have the right to determine their own organizational structure and to elect their own administrative bodies. In terms of human resources autonomy, universities enjoy the right to select the scientific-didactic and research staff, as well as the administrative and ancillary staff. The universities from the Republic of Moldova switched to financial autonomy in January, 2013. The autonomy mechanism will be implemented in several stages, for two years, due to the fact that still remain unsolved questions concerning the operation way of the financial autonomy of HEIs, the calculation of real expenditures on training per student, the way to finance HEIs by the state for provided service, etc.

Since 2000 there has been registered a real university expansion manifested by an explosion of demand for this type of education. The expansion of higher education, which aims to increase the number of students, was not supported by an adequate funding that would ensure qualitative education. The expenditures on higher education recorded the slowest growth trend in comparison with other educational programs. If expenditures on the education system increased from 2005 to 2010 in 2.4 times from the total of the national public budget expenditures (NPB), then expenditures on higher education increased only in

1.8 times. However, state funding of higher education increased from 37% of total expenditures from BPN in 2007 to 54% in 2011. Thereby, it is worth mentioning that the funding of public universities is carried out on account of two categories, basic fund - from the state budget (budget spending) and special funds (extra budget spending).

The major challenges that the higher education faces in the Republic of Moldova are:

- the incomplete legal-regulatory framework, uncertainties regarding the status of doctoral and post-doctoral studies in HEIs;
- still low level of autonomy of HEIs;
- hyper centralization of mechanisms for financial management of HEIs, diminishing the role of performance criteria and relevance in the allocation process by the state of financial means/resources for universities;
- relatively small proportion of graduates work in accordance with the qualifications received at HEIs and the absence of special mechanisms for monitoring their professional career;
- inefficiency of interaction mechanisms of HEIs with the fields/areas of research and development, business, labor market;
- the Republic of Moldova remains more of an observer, not an active participant in the European educational space.

It is obvious that most of the issues associated with under-funding of higher education are relevant because they affect the quality of education and overall university performance. One of these issues concerns the student dormitories. Better living conditions in the student dormitories are a necessity of primary importance in ensuring the quality of education at all levels. Being properly equipped, the dormitories can provide students both living conditions and conditions for qualitative study. Moreover, the lack of university dormitories and hotels with respective living conditions is a serious obstacle to extending the activities the exchange of students, academic staff and researched with the universities abroad.

The state budget deficit and increasing tariffs on heating and electricity have exacerbated the situation of inability to pay the cost of maintenance of student dormitories. Thus, at present, the state can hardly ensure decent living conditions in the dormitories. Limited financial resources cover the existing necessities in the system only partially. Although public expenditures on education have increased in recent years the allocated resources are insufficient.

According to the Ministry of Education of Moldova, currently there are 292 functional dormitories in the Republic of Moldova. 14.3% of student dormitories are in dysfunctional state. 50% of the dorms require major repairs. Some dormitories require both capital and current repair. Their share constitutes 70%. Approximately 30% of the dormitories are first-generation dormitories built 35-40 years ago, which became morally obsolete, lost their constructive resistance and use energy excessively. They require a major overhaul of the structural frame, engineering networks and water supply. The dormitories built in more recent years require the improvement of elements of energy conservation, as well as the upgrading of technical equipment: change of the lifts that exceeded the operating period of 25 years, switch to the autonomous systems of heating, ensure the constructive reliability of the building erected from panels that have borne 4 earthquakes last century.

The maintenance of the dormitories is ensured by three basic actors: the state, the student and the educational institution. In accordance with the legislation, the state is responsible for paying 60% of the current cost of maintenance of dormitories of higher education institutions, providing current repairs, insurance of capital expenditures (capital investment, overhauls, and purchase of fixed assets). Educational institutions are responsible for providing current repairs and assuring overhauls expenditures. The student is responsible for paying 40% of the actual cost of maintaining a place in a dormitory.

The analysis of the financial reports shows that in 2009 the average monthly cost of maintaining a place in a dormitory was 247.5 lei, of which a student paid 99 lei (40%). The situation is a little different in reality. After analyzing the number of people who stay in the dormitories and the monthly cost of maintaining a place in the dormitory (for 2009) it is clear that the actual total expenditures for maintenance of dormitories exceed the total expenditures shown in the financial report. This difference is of about 13%. The difference is acquitted from other special means (except accommodation fee) of educational institutions. Therefore, the real total cost of dormitory maintenance is covered by the key stakeholders in the following proportion: 54% are paid from the state budget and not 60% as stipulated by law. 33% of the total cost of maintaining a place in the dormitory is paid by students and 13% are paid by educational institutions.

During the years 2010-2012 the utility tariffs increased and as a result the cost of the current maintenance increased. Besides it is clear that the state's ability to pay in the coming years is lower than in 2009. Regarding capital expenditures provided by the state and educational institutions for student dormitories, they are also insufficient to cover urgent needs. Therefore, it appears that the educational system faces the problem of unsustainable policy of ensuring decent living conditions in student dormitories.

The causes that determined the policy inefficiency on ensuring decent living conditions in student dormitories are: on the one hand, in the context of reducing public revenues due to the financial and economic crisis the expenditures on education were shrunk, which resulted in insufficient allocation of resources for the maintenance of student dormitories. On the other hand, the decision to promote the policy of the state was taken without calculating possible financial and economic effects. The lack of an estimate of the potential financial impact on the public budget in combination with the lack of financial resources and poor management has worsened the situation regarding living conditions in dormitories.

Consequently, some dormitories have reached the inoperable condition, i.e. disconnected from all networks and unable to accommodate tenants. In parallel for functional dormitories the insufficiency of the financial resources often determines imposition of restrictions on the electric, thermal, and water supply agents, until their suspension. The insufficient purchase of soft inventory, furniture and other assets makes conditions in student dormitories remain in deplorable state. With the exception of several dormitories of the higher education system, living conditions are precarious. This fact leads to physical and mental discomfort, health damage and finally limitation of access to education.

To save the dormitories from damage HEIs allocate special resources accumulated contrary to legislative provisions. (Government Decision no. 196 of 02.02.2007 on special means of

institutions under the Ministry of Education and Youth). Despite these efforts, living conditions in dormitories continue to worsen. All these factors taken together determine the inability to satisfy all requests for accommodation in dormitories, overcrowding and dissatisfaction of the tenants. Therefore the effects of the current situation have a negative impact on the education system. Hypothetically, the long-standing issue of not assuring decent living conditions in student dormitories can generate the phenomenon of shortage of qualified human resources in the Republic of Moldova.

MSU has 16 dormitories under its management, located in three campuses: Tighina, Pan Halippa and Gheorghe Cașu. These dormitories were built in different periods, the oldest being the university dormitories of Tighina campus, whereas the most recently built dormitory is no.16, where the latest overhaul was performed. Although some dormitories were erected more than 40 years ago, they were no capital repairs during this period. Last overhauls of the MSU accommodation structures were performed almost 15 years ago. Currently the functionality of the buildings and spaces is maintained only by current repairs and local interventions, depending on technical condition of the dormitories.

The area of the MSU dormitories is partially functional and is not enough for accommodation of students in the total volume of applied requests. Living rooms of the dormitories, as well as those of the common use, are arranged according to the minimum standards as stipulated in the regulations. All the furniture, consisting of beds, wardrobes, study tables and chairs, bedside tables and shelves for books, as well as bedding (mattresses, sheets) are used. According to the Regulation on functioning of dormitories under the subordination of the state education institutions, the responsibility for carrying out current repairs of living rooms, their arrangement is the liability of lessees. They are entitled to repair and furnish the room to their own discretion, but without changing its architecture and without claiming for compensation.

RATIONALE AND INTENDED RESULTS

Ensuring students with places in hostels and improving living conditions in the dormitories is a necessity of prime importance in ensuring the quality of education at all levels, supported by the priority granted under public policy of education to quality improvement and increase equitable access to educational services for children and young people in Moldova. Only properly equipped, dormitories are able to provide students both living conditions and conditions for qualitative study. Currently, however, the educational system faces the problem of unsustainable policy of ensuring decent living conditions in dormitories. The consequences of this situation have a negative impact on the education system, which loses its attractiveness.

Being aware that image of the MSU both nationally and internationally (taking into account the intensive cooperation with EU universities) largely depends on the conditions of life in the dorms, but also being unable to ensure their modernisation from its own financial resources, the university leadership decided to initiate a project to establish a Public-Private Partnership for renovation of student accommodation infrastructure.

This partnership, which aims to design – rehabilitation - operation and transfer of student campus dormitories, had to be concluded for a period of up to 25 years between the Ministry

of Education and the private partner, winner of a public contest. According to the project after modernisation the dormitories were to be used again by MSU students, and, during the contract period, the private partner should manage and maintain the infrastructure of accommodation.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

In order to evaluate opportunities of improving living conditions in student dormitories through their renovation and modernisation, in the summer of 2011 the MSU administrative body initiated an examination of campuses by experts in the field. The procedure started with the MSU campus Tighina, which was built during 1950-1956. There are student dormitories no. 1, 2, 3, 4, Canteen no. 2, the Department of Physical Education, the Sports Center, and the Culture Center of the MSU on the territory of the campus. Student complex Tighina is characterized by an accommodation capacity of 752 places, with the sanitary norm of 1, 2, 3, and 4 places in a room.

There has been made technical examination regarding the reconstruction and the possibility to build attic floor in the dormitory no.3. In this context there was considered the degree of protection of land for rainwater accumulation and seismic stability of the building. Since the other dormitories from the campus have been built in the same period and have a similar structure with the building of the dormitory no.3, technical examination results were considered, by extension, valid for dormitories no. 1, 2 and 4.

It was discovered that the dormitories of the university campus Tighina were morally obsolete and lost their constructive resistance, besides they use excessive thermal energy. The living space of the student dormitories is only partially functional and insufficient for placing students in the total volume of the request applied for accommodation. The Regulation on functioning of dormitories under the subordination of the state education institutions is violated, where according to the locative norm students are to be lodged 6 m² per person. The technical condition of dormitories is characterized by the advanced usage of the buildings, which have structural deterioration, do not meet current regulatory requirements on seismic protection. Structural analysis of the constructions classified the buildings as outside the safety structure, in compliance with the modern requirements.

The current state of the rooms of the dormitories, furniture, equipment and utilities do not meet sanitary – hygienic requirements as being partly or totally out of order. Therefore it is necessary to initiate a project to modernize dormitories urgently and change furniture, equipment and utilities with new that will correspond to sanitary – hygienic requirements standards.

Social opportunity of the project is focused on increasing access of the students to quality education services, in particular accommodations, as well as ensuring sustainability policy of decent living conditions in dormitories. Economic opportunity of the project is justified by the high demand of accommodation requests of students both at the level of the country and in particular the level of the MSU; the availability of most students to pay a higher fee for the modern and comfortable living conditions; the low capacity of the state to cover maintenance costs of student dormitories, in total maximum of 60%, settled according to Government Decision no. 99 of 30.01.2007 on accommodation fees in dormitories of state educational institutions due to the budget deficit and the continuous increase of utility tariffs; the lack of

state budget allocations and allocations of special means of educational institutions to perform overhauls in student dormitories; the need to optimize the costs of management and maintenance of dormitories that are outdated.

The fulfillment of the modernisation project of the dormitories from the Tighina campus requires considerable financial investments that the MSU has not have. However the state does not have the financial capacity to support this project. In these circumstances the only possible solution was to determine alternative ways of project funding by attracting private investors. For this purpose, the project was revised and in the new version was stipulated that after modernisation dorms will be operated and managed by the private partner for 25 years, but will continue to be destined for MSU students. In the autumn of 2012 the MSU administration began to consider the possibilities of using the PPP mechanism - Public Private Partnership (PPP), according to Law no. 179 of 10.07.2008, on the public-private partnership (Official Monitor of the Republic of Moldova, 02.09.2008, no. 165-166, article no. 605).

Public-private partnership is a means to achieve multiple purposes: the use of unexploited resources and strengths of the private sector; consolidation of the capacity to provide educational services to meet the growing needs; reduction of the financial constraints on public administration; reduction of geographical and environmental disparities in providing educational services by removing existing gaps; improvement of infrastructure related to educational services; improvement of the efficiency by involving of new management structures; attraction of private investments for realizing priority projects in infrastructure of educational services.

Performing the necessary documentation the leadership of MSU addressed the Ministry of Education of Moldova (ME) the proposal to create a PPP to modernize the dormitories from the Tighina campus that are under its management. Public Private Partnership project on development and modernisation of accommodation infrastructure of the MSU is in accordance with the measures foreseen by the Government Action Plan for 2011-2014, approved by the Government Decision no. 179 of 23 March 2011 (Official Monitor of the Republic of Moldova, 2011, no. 46-52, art. no. 212). The goals of the social integration and development of the potential of young people, integrated into the Youth and Sports Policies, included in the framework of this plan provide construction and modernisation actions of dormitories for students and pupils, by initiating a national program for the construction and modernisation of student dormitories on the basis of public-private partnerships. The development of the MSU accommodation infrastructure corresponds with the objectives set by the 2009-2013 National Youth Strategy, approved by Law no. 25 of 03.02.2009, and is in accordance with art. 62, paragraph (3) of the Education Law no. 547-XIII of 21.07.1995.

The analysis of local reports in the public-private partnership, made by the ME together with the administration of the MSU has allowed the identification and emphasizing of needs of implementation public-private partnership in the development and modernisation of accommodation infrastructure of the educational institutions from the Republic of Moldova that can be categorized as follows: the quality of services related to educational services (the situation on providing students with living spaces is unsatisfactory and their quality does not meet the needs of students because of faulty management, etc.), tariff policy, the use of fixed assets (lack of sufficient budgetary resources to invest in overhauls of the dormitories etc.).

This Public-Private Partnership is a tool and a mechanism for education authorities to conclude agreements with the private sector to rehabilitate the student dormitories. There are two dimensions underlying the functioning of education systems improvement as a result of the implementation of public-private partnership. The first is the economic dimension that consists in replacement of the direct and hierarchical structure management with contractual relations between suppliers and consumers, the fact that will increase price transparency, quality and quantity of services, as well as competition that consequently will increase the efficiency. The second dimension is the political - in the context of the social reforms, decentralization of the services must be made with the participation of all the stakeholders in the development and implementation of services.

It should be mentioned that the state policies in the field of public-private partnerships are promoted by the Government of the Republic of Moldova through the Ministry of Economy (policy elaboration), Public Property Agency (policy implementation), the Ministry of Finance, Central Public Authorities, Local Public Authorities, the National Council for Public-Private Partnership, PPP Government Network.

To create PPP with the aim to renew its dormitories MSU had first to obtain a favorable opinion from most of the above-mentioned institutions, plus the Ministry of Justice. On July 2nd July 2012 the Government adopted Decision no. 472 "On the public-private partnership to renovate the dormitories of MSU." According to this decision under article 11, letters a) and e) and article 25 letters a) and b) of Law no. 179-XVI of 10 July 2008 on public-private partnership, the proposal of the Ministry of Education on the approval as a core objective for public-private partnership of MSU dormitories renovation, located on 2, Tighina Street, Chisinau municipality, was accepted. The Ministry of Education has been designated as the central public authority responsible for the elaboration of the feasibility study to assess the viability of the project, constitution proceedings and objectives of the public-private partnership, whereas the expenses necessary for the feasibility study being put in charge of MSU.

Subsequently, in accordance with the regulatory procedures, the MSU elaborated a project and the Government approved Decision no. 95 of February 1, 2013 "On the approval of objectives, general requirements for the selection of the private partner and the public-private partnership conditions for renovation of some dormitories of MSU." According to this decision, on the basis of letters b) Article 11 of Law no.179-XVI of 10 July 2008 on public-private partnerships, the objectives and general requirements for the selection of the private partner and the terms of public-private partnership to renovate the dormitories of MSU have been approved, and the Ministry of Education has been designated as a public authority responsible for the selection procedure of the private partner and conclusion of the contract with it.

The present normative act provides that the selection of the private partner shall be made by the Private Partner Selection Commission, created by the Ministry of Education as the public partner, being obliged to define the criteria for private partner selection, to approve information communiqué on the contest development, to establish the size of the participation fee, to hold the public contest, to open the offers and to determine the winning tender.

After receiving all nominations, by the order of the Minister of Education, the Private Partner Selection Commission was formed, headed by a deputy minister of education that approved information communiqué on the initiation of public-private partnerships and content of specifications. The information communiqué was published in the Official Monitor of the Republic of Moldova on May, 3 2013, having mainly the following content:

"The Ministry of Education announces the initiation of a private partner selection procedure for the implementation of public-private partnership project for the renovation and operation of the dormitories of MSU, located at: MD-2001, Republic of Moldova, Chisinau, 2, Tighina St. The university dormitories complex is to be rebuilt and developed the necessary infrastructure on the territory of the project objects according to technical specifications. The public-private partnership will operate under the construction contract of the public-private partnership on projection/design – rehabilitation - operation and transfer of the dormitories no. 1, no. 2, no. 3 and no. 4, of the university campus in Chisinau, 2, Tighina St., concluded for a period of up to 25 years between the Ministry of Education and the successful tenderer. The winning tenderer will be entitled to use the infrastructure project, led by MSU, in the manner determined by the Private Partner Selection Commission. The private partner selection will take place in a single step through the evaluation of the technical and financial tender offers. The requirements for tenderers as well as the data that are to be included in the tender are set out in the specifications. To participate in the contest and receive specifications, the tenderers will pay a fee in the amount of 500 lei. Technical and financial tender offers, in accordance with the specifications, shall be received within 60 days after the publication in the Official Gazette of the Republic of Moldova. Tenders will be opened up by the Selection Commission on May 3, 2013. The selection procedures will be made based on the requirements developed by the Private Partner Selection Commission. The results of the competition will be announced within 30 working days from the time of tenders opening session. "

After the publication of information communiqué, the specifications were purchased by three bidders, but the tender offer was proposed only by a single bidder. On 3 July 2013, the Commission for the selection of the private partner opened, in the presence of the bidder, the technical offer, that was analyzed by committee members. On July 8, 2013, at its meeting, the Commission decided not to accept the proposed offer because it did not comply with the essential requirements set out in the specifications, and decided to extend the contest. At present the private partner selection contest is in progress.

FACILITATING FACTORS

The main factors that contributed to the implementation of the proposed project were the awareness by the university leadership about the impossibility to keep the dorms in their current state and its readiness to take responsibility for ensuring the MSU students have decent living conditions in the dorms, which is an important factor in ensuring the quality of higher education. Modernisation of the dormitories, may also contribute to academic mobility, the invitation of researchers and professors from foreign universities. On the other hand, the transfer of dormitories to external management, as required by the project, would significantly reduce expenditure related to the maintenance of university infrastructure.

CHALLENGES AND OBSTACLES

The development and approval of two government decisions was very difficult due to bureaucratic regulatory framework and the need for coordination of the project. Thus, for the

second Governmental Decision, repeated approval by all public institutions and authorities that have already approved the project was required. Also, although formally the initiator of the project was the Ministry of Education, all activities related to the development, coordination and promotion of the project was performed by the MSU. The whole process - from the moment that MSU addressed the Ministry of Education with the proposal to create a PPP to modernize its dormitories, till the adoption of second Governmental Decision - lasted more than 1.5 years.

In addition, in accordance to normative acts, selection of the private partner who will implement the project is carried out by selection committee, created by the Ministry of Education. The approval of this committee has also required quite a long time, because persons from several public authorities and institutions were included in it (three central public authorities and one public institution - USM) and every candidate was coordinated with the Ministry of Education. This has delayed the project by almost a month.

However, the fact that only one of three economic agents, which have shown interest in this project, has submitted its bid was caused by some shortcomings in the specification proposed, that were considered by the committee. The specification was adjusted and completed to remove the obstacles which have resulted in the need to extend the contest to select the private partner.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

It should be mentioned that the public-private partnership project to modernize MSU's dorms is absolutely innovative not only for MSU, as a beneficiary, but also for the Ministry of Education, as a central public authority in the domain, because it is the first project of its kind in education. In the present project, direct beneficiaries are: MSU students, the private partner, the Government, civil community as well as indirect beneficiaries: the future employees (and their families) of the company created to manage the project and the modernized accommodation structure, companies that will be contracted for the project, students from other universities who will benefit from the new accommodation structure in specified cases, people who will benefit from accommodation in the hotel in the summer, etc. Obviously, this experience of MSU can also be used to address other problems in education, aimed at alternative sources of funding or alternative forms of management.

SUSTAINABILITY OF THE GOOD PRACTICE

In case, in the near future, the private partner will be designated, the sustainability of project will be provided by MSU interest in continuing modernisation of its infrastructure (dormitories, academic buildings, study and research laboratories, etc.) as well as by the normative acts approved by Government of Moldova. The experience gained during the implementation of this project could be used to attract private partners, non-profit as well as the for-profit to support and funding of educational and afferent services.

TRANSFERABILITY OF THE GOOD PRACTICE

We believe that this experience of MSU cannot be directly transferred to other institutions, taking into account the diversity of national laws and universities duties in different countries, but also, due to specificity of problems, which institutions seek to solve.

But, apart from those mentioned above, generally, we can highlight the following key points:

1. Detailed knowledge of the situation (problem) that is intended to be solved.

2. Knowledge of the Legislation in force.
3. Involvement in the project development of external experts (at least as consultants) and of competent persons within the institution, with skills of communication and persuasion.
4. Cooperation with the Government and the state institutions in charge.
5. Insistence and consistency in action.
6. Patience and optimism.

LESSONS LEARNT AND RECOMMENDATIONS

MSU Working Group of the project has worked quite effectively. This is due to the fact that it has consisted of people with a law background, as well as those with experience in building construction and economy. Their insistence and consistency in action and ability to communicate and persuade were the keys of successful implementation of the legal part of the project. Since the project is an absolutely new experience not only for MSU, but for all state institutions and public administrations involved in this process, it is difficult to say what should be done differently. But now, due to this project, we do have the algorithm of actions that can be further used to attract economic agents and other stakeholders for expertise and financial support of education.

The main recommendation would be:

When you are really concerned about the problem, have a proper strategy to solve it, take responsibility and start to act.

Do not expect it to be easy to face the bureaucracy.

Engage people around you who think alike.

Be patient, persuasive and open-minded. Only then will you have a chance to succeed.

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26. Academic Honesty Policy

Gavar State University, Armenia

EXECUTIVE SUMMARY

The urgent problem of working out and implementing anti-corruption policies in all spheres and, particularly, in the sphere of education, has emerged in Post-Soviet states. The higher education system of the Republic of Armenia has also encountered this challenge. It is necessary to take measures to create an honest academic environment, work out and introduce anti-corruption mechanisms both at general systemic and higher education institution levels. The scientific council of Gavar State University (GSU) endorsed the anti-corruption strategic plan of GSU for 2006 – 2011 years, and then also for 2011 – 2016 years. The GSU anti-corruption strategic plan declared the following principles: “Education without corruption”, “Education against corruption”. The “GSU Academic Honesty Policy”, the elaboration, endorsement and implementation of which is the first practice in the HEI system, was accepted on 30th April 2010 and then improved in 2012 by the university scientific council.

GSU anti-corruption strategic plan and GSU Academic Honesty Policy, being the constituent parts of the university development and reform policies, aim at providing for the development of the university as a transparent institution which has adopted democratic principles. One of the most important constituent parts of GSU anti-corruption strategy is the working out and execution of normative documents regulating all the phases of learning process, and particularly, adoption, implementation and control of GSU Academic Honesty Policy. The anti-corruption strategy of the Republic of Armenia, the complex event schedule against corruption phenomena in the education system of the Ministry of Science and Education of the Republic of Armenia and GSU anti-corruption strategic plan serve as a basis for GSU Academic Honesty Policy.

In this case study the aims of GSU Academic Honesty Policy are introduced, which are the following:

- ensuring academic honesty, justice and objectivity;
- protection of rights of educational process participants;
- application of accountability structures;
- increasing responsibility among lecturers and university staff;
- disclosing cases of academic dishonesty;
- creating honest academic environment.

In the case study the problems of GSU Academic Honesty Policy are resumed, which are the following:

- enshrining the major directions and principles of GSU Academic Honesty Policy;
- defining the cases of academic dishonesty and their legal implications;
- identifying the expected results;
- ensuring justice and transparency in all the phases of educational process;

- accomplishing anti-corruption structures;
- preventing bribery and corruption phenomena;
- enforcing academic honesty culture at the university.

BACKGROUND INFORMATION

The entrepreneur and founder of CSU is the Doctor of Philosophy, Prof. Hrant Khachatur Hakobyan. Thanks to the persistent efforts of the deputy of the Supreme Council of the Republic of Armenia Hranush Hrant Hakobyan a regional state university was founded in Gavar (formerly Kamo) according to governmental decision No 208 of the Republic of Armenia on 5th May 1993. To organize the educational process efficiently, 120 best specialists have been invited. More than two thousand and five hundred students from different regions and the capital of the Republic of Armenia study at GSU. At the university, higher professional and educational curricula are implemented within the systems of full-time and part-time studies. Sixteen generations graduated from GSU. The university has more than 5000 graduates.

Most of the graduates of GSU work in governmental and non-governmental bodies, banks, schools and other educational institutions and organizations. The university has a scientific library, reading hall, four computer laboratories provided with Internet connection, equipped laboratories. The student self-government bodies operate actively at the university, among them being the student council, student scientific society, legal clinic, clubs of economists, philologists, historians and naturalists, art studio, debate club. The university faculties are distributed in three academic buildings, where all the necessary conditions are created to carry out learning and teaching processes at high quality. In compliance with the Bologna process, two-level system of education is in action in GSU providing undergraduate and graduate programmes. The university consists of five Faculties:

- Faculty of Philology
- Faculty of Humanities
- Faculty of Natural Sciences
- Faculty of Economics
- Faculty of Part-time education.

According to three professions taught, the Faculty of Philology has the following departments:

- Armenian language and literature
- Russian language and literature
- English language and literature.

The Faculty of Humanities implements educational programmes on the following professions:

- Law
- History
- Pedagogy and Methodology (elementary education).

The Faculty of Natural Sciences implements educational programmes on the following professions:

- Geography
- Biology
- Ecology and Nature Management

- Pharmaceutical chemistry
- Mapping and Cadastral Case
- Service (Tourism)
- Informatics and Computer engineering.

The Faculty of Economics provides undergraduate and graduate programmes on the following professions:

- Finance
- Accounting
- Enterprise Economics and Management.

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

The scientific council of GSU distinguishes the following challenges:

- inertia of negative phenomena of Soviet regime;
- corruption, sponsorship, mediation, abuse of official powers, bribe taking, bribe giving;
- extortion and committing other criminal acts displayed in different spheres of post-Soviet states;
- deformation of the system of moral values peculiar to transitioning societies;
- unhealthy thinking within post-Soviet societies;
- corruption risks in higher education institutions;
- inappropriate motivation of students;
- applying for mediations by students and their parents, giving presents, providing services or bribing the lecturers and university executives in any other way for the purpose of receiving grades and graduating from the university;
- impossibility of ensuring justice, objectivity and quality education in dishonest academic environment.

To confront the above-mentioned challenges and to make positive changes, to ensure the modernisation process, GSU takes the following steps:

- carrying out consistent explanatory work with students towards indicating the importance of education, providing knowledge as a value, introducing professional knowledge, abilities and skills as a warranty of competitiveness and prosperous life;
- organizing regular meetings with parents of GSU students both at the beginning and the end of the academic year, clarifying GSU anti-corruption policy, introducing provisions of GSU Academic Honesty Policy;
- GSU Rector, Vice Rectors, Faculty Deans, Assistant Deans, supervisors, lecturers, as well as student council members take part in the parent meetings. They answer the questions of the parents, emphasize the importance of obtaining grades honestly, indicate the necessity of applying for GSU Rector's office or Dean's office, leaving a letter in the "confidence box", calling GSU hotline (037410-28-20-75) and introducing the case, writing a letter to GSU e-mail address (info@gsu.am or infogsu@mail.ru) in case of dealing with cases of dishonesty;
- Implementation of programmes towards moral education of university students, infusion of patriotic and humanitarian values in learners, formation of civil position not tolerating any case of academic dishonesty by means of organizing different

events, collective readings of books, collective watching of films, guided tours to historical and cultural places of Armenia.

THE WIDER CONTEXT

GSU operates in Marz (regional unit) of Gegharkunik, the Republic of Armenia. GSU mission is to promote the social, economic, spiritual and cultural development of Marz of Gegharkunik, the Republic of Armenia. The university is the only state higher education institution in the region. After the collapse of USSR, some industrial and agricultural infrastructures have also collapsed in Marz of Gegharkunik, and the region has encountered a serious socio-economic crisis. Taking into consideration that from 1990 to 1993 the index of school graduates admitted to universities in Yerevan has abruptly decreased serious measures have been taken to found a higher education institution in the region. On 5th May 1993, by the decision of government of the Republic of Armenia, the university was founded which has committed to corporate social responsibility, keeping tuition fees low and providing tuition discounts for 20 years.

GSU gives importance to the following priorities:

- ensuring an honest learning environment;
- motivating students, prompting them to take a personal responsibility for their education and learning outcomes;
- improving the quality of education;
- reinforcement of quality culture;
- making positive changes in all the spheres of university activities.

A self-assessment has been made at the university and the positive and negative sides have been revealed. Internal and external challenges, as well as unused opportunities have been identified, complex self-evaluation has been carried out - these processes being a prerequisite for the university institutional and programme accreditation, warranty of progress and development. Among the acquisitions of the university the following can be listed:

- introduction of GSU Academic Honesty Policy;
- obtaining a license for educational programmes of new professions both in full-time and part-time education systems;
- improvement of documentation, methodological and logistical bases of educational process;
- modernisation of learning environment.

Clear mechanisms for information exchange and accountability operate in GSU. "Mulberry" – electronic document circulation system has been introduced at the university, measures are taken to create quality assurance faculty departments in addition to Quality Assurance Department of Academic Policy Board of the university. GSU is an institution having a clear system of values, which maintains its commitment to traditions, and at the same time, gives importance to innovation and follows the recent developments in education.

All the educational programmes and curricula are constantly updated, GSU regulations and procedures are improved, students' knowledge testing and multi-factor evaluation system is reviewed, transparency in decision making process is ensured, management predictability, publicity and accountability of university activities through all the directions and levels are

guaranteed. While implementing its activities, the university takes into consideration external and internal challenges and threats, socio-economic and demographic problems in Marz of Gegharkunik, lack of state budget funding, discrepancies between strategic objectives and financial receipts and political and socio-economic crises regularly shocking the world.

In these conditions the problem of the university is to ensure:

- flexible financial and economic activities;
- expansion of service list in full-time and part-time faculties;
- implementation of grant programmes;
- application of the latest technologies in educational process;
- best use of opportunities of partner organizations;
- target work with schools in Marz of Gegharkunik to involve the school graduates into higher education sphere.

The University implements student academic mobility programmes cooperating with universities of Italy, Greece, Spain, Belgium and Rezekne Higher School in Latvia and others. GSU is a member of European Union's two Erasmus-Mundus and four Tempus programmes, thus cooperating with different European universities. GSU is presented in the web domain both in the Armenian education portal and www.gsu.am own website which includes sections for entrants, students and graduates, GSU "YouTube" official video blog, anti-corruption section and other components. In the website, in section "Statutes, Regulations" of "about GSU", documents adopted by GSU, as well as Academic Honesty Policy in Armenian and English languages are posted.

The GSU website was recognized as the best among the universities in different regions by international "Webometrix" university ranking organization. During 2011-2012 and 2012-2013 academic years cooperation memoranda have been signed with partner organizations, including "Geghama" TV company in Marz of Gagharkunik. Based upon that memorandum, a TV programme called "University hour" is organized, within the framework of which programmes highlighting different spheres of university activities are broadcasted.

Those programmes are of educational, scientific, cognitive, informative, cultural and educational significance and provide for dissemination of appropriate information about the university, introduce the principles and values adopted by the university to the public, touch upon the process and results of programmes implemented by the university, introduce the main provisions of Academic Honesty Policy and its practice of application. All the programmes of "University hour", including the one called "The lesson is conducted by the university professor", are posted on "YouTube" official video blog of www.gsu.am website and are also available on the Internet.

Target works are carried out at the university towards reinforcement of university corporate culture, consolidation of GSU good reputation and consistent implementation of provisions of the university anti-corruption strategic plan and GSU Academic Honesty Policy.

In compliance with Academic Honesty Policy, the University operates on the principle of ensuring legality, publicity, transparency, protection of students' rights, honest, anti-corruption environment. An anti-corruption investigation of GSU regulations and procedures has been carried out, mechanisms for preventing corruption risks have been developed and

implemented.

It should be noted that all the reforms made at the university indirectly have an anti-corruption nature. Particularly, the following have anti-corruption nature:

- clear definition of GSU mission as an educational institution implementing professional higher education programmes, educational, scientific and cultural centre of Marz of Gegharkunik and at the same time the largest taxpayer and employer in the region;
- regular introduction of GSU anti-corruption position by national and regional mass media;
- ensuring availability of information about the university;
- continuous explanatory work with students and parent community, providing feedback between them and the university;
- legality, collegiality and transparency of students removal, dismissal and recovery processes;
- maintaining an “open door” policy;
- permanent availability of “hotline” and “confidence box”;
- activities of GSU Academic Honesty Committee;
- efficient, economic and reasonable use of GSU financial flows and logistical resources;
- adherence to the principles of social justice and legality in all the spheres of university activities.

In pursuant to GSU Academic Honesty Policy GSU working group developed a plan and won the grant programme entitled “Development and introduction of new methods for testing and evaluation of students’ knowledge” announced by the Ministry of Education and Science of the Republic of Armenia. By means of grant funding, students’ knowledge testing and evaluation computer programme – “Examination-GSU” was developed and launched at the university. The programme excludes any cases of academic dishonesty by students, such as rewriting, mediation or attempts to bribe. Computer-based examination excludes any cases of academic dishonesty by lecturers, such as non-objective assessment or subjectivity, mediations, accepting presents or some other services, etc.

Anonymous surveys are regularly conducted among students, which, in addition, contain questions aimed at detecting violations of Academic Honesty Policy. GSU representatives have participated in national and international seminars, presenting the main provisions of GSU Academic Honesty Policy. GSU Academic Honesty Committee composed of students and lecturers, has functioned since 2010 and has inspected the recorded cases of rewriting by students during the midterm exams and has taken respective measures.

GSU students, along with lecturers took part in the discussion of GSU Academic Honesty Policy draft, then participated in the series of seminars on clarifying the provisions of GSU Academic Honesty Policy; at the same time, seminars on similar topics by the efforts of students were held in Gavar and Sevan high schools in Marz of Gegharkunik. GSU Academic Honesty Policy was introduced to the representatives of other universities by GSU Rector and Public Relations Department, besides a report on the Policy was presented at the International Conference in Yerevan. Continual work is carried out at the university to create an atmosphere of intolerance towards unfair practices and to ensure fair learning environment.

RATIONALE AND INTENDED RESULTS

The choice of successful practice of adoption and implementation of Academic Honesty Policy by GSU is due to the fact that this is an important issue for all the universities. Creating fair and honest academic environment at universities is the demand of time and requires an immediate solution, and as output results we envisage the maintenance of academic honesty rules by GSU lecturers and students, as well as adoption and implementation of academic honesty documentation by other universities.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE

After the adoption of GSU Academic Honesty Policy, the clauses of the Policy have been inscribed in the employment contracts signed with members of GSU administrative and professorial staff. Each person, being employed by the university, gets acquainted with the provisions of GSU Academic Honesty Policy, then with clauses of employment contract and signs it, thus giving his consent to maintain the honesty rules during the work. The rules of Academic Honesty Policy are inscribed in GSU Student Charter, with which the student gets acquainted and signs it. Each new employee, as well as first-year students are being explained the principles and provisions of GSU Academic Honesty Policy, cases of academic honesty or dishonesty, activity rules of Academic Honesty Committee.

The Committee inspects the recorded cases of academic dishonesty and all the concerned parties, as well as students and lecturers are informed about the results to prevent such cases. The meetings of GSU Academic Honesty Committee are convened in case of necessity, and the Rector of the university is informed about the decisions. On the basis of decisions made by GSU Academic Honesty Committee in 2013 five lecturers have been dismissed, two lecturers and thirteen students received a severe reprimand. GSU Rector, Academic Honesty Committee, deans, lecturers and students are responsible for implementation of provisions of Academic Honesty Policy.

RESOURCES REQUIRED AND USED

GSU Academic Honesty Policy was worked out on a voluntary basis by lecturers of Law Chair, without financial resources. The draft Honesty Policy, again on voluntary basis, has undergone an examination by “Civil Society” non-governmental organization. GSU lecturers and students took part in the discussion of the draft without financial expenses. Thus the Policy was designed and implemented without financial resources. However, on the purpose of printing and dissemination of Policy provisions some expenses have been incurred by “World Vision. Armenia” international relief and development organization. GSU does not have a state budget funding, it operates on the principle of self-financing and suspend mode, so the university does not incur additional and unforeseen expenses.

FACILITATING FACTORS

The following factors have contributed to successful implementation of GSU Academic Honesty Policy:

- principles of honesty, impartiality and integrity adopted by GSU founding Rector Hrant Hakobyan and his staff;
- GSU management’s willingness to work honestly, without a violation of academic honesty;
- public control over the activities of GSU;

- the confidence that GSU gained among students, alumni and parents for twenty years of its activity;
- the fact of Gavar being a relatively small town, where almost everyone knows each other and the news of honest activities of GSU spread quickly;
- open and transparent operations of GSU, availability of accountability and feedback mechanisms;
- submission of annual reports by GSU Academic Honesty Committee and publication of those reports
- implementation of social corporate responsibility programmes by GSU;
- the fact that GSU management and staff attach importance to the good reputation of university;
- honest academic environment in GSU as an important prerequisite for quality education and active creative work.

CHALLENGES AND OBSTACLES

We have encountered the following difficulties while developing and implementing GSU Academic Honesty Policy:

- scepticism towards honest and incorruptible policy adopted by GSU;
- mediations by different people and representatives of partner organizations, which are gradually decreasing being rejected and not encouraged;
- criticism of GSU Academic Honesty Policy by other institutions;
- inaccurate perceptions of provisions of GSU Academic Honesty Policy, etc.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE

The adoption and implementation of GSU Academic Honesty Policy is an innovation not only for GSU but also the whole higher education system in the Republic of Armenia. Different acts are operating in different universities of the Republic of Armenia:

- charters;
- regulations;
- statutes;
- procedures;
- orders;
- instructions;
- other documents.

Specifically, sixty regulations are in action in GSU, referring the resolution of different spheres of university activities. In GSU the adoption of regulations, envisaging distinct mechanisms for them, and the application of those mechanisms are considered as an important way of ensuring legality, restricting subjectivism, ensuring predictability in all the processes of GSU, implementing democratic principles and maintaining justice and objectivity. In the entity of documentation being in action at the universities in the Republic of Armenia, GSU Academic Honesty Policy, endorsed by the university scientific council, is an innovation, and the consistent implementation of provisions of GSU Academic Honesty Policy can also be regarded as an innovation.

SUSTAINABILITY OF THE GOOD PRACTICE

The addressed practice has been successfully implemented in GSU, and the sustainability of that practice is guaranteed by the following factors:

- provisions of GSU Academic Honesty Policy are interpreted by senior students for the freshmen;
- GSU experienced staff explains the requirements of Academic Honesty Policy and the importance of maintaining them to the start-up employees of GSU, and useful social experience is being transferred;
- the people being employed by GSU read and get acquainted with GSU Academic Honesty Policy;
- provisions of GSU Academic Honesty Policy are inscribed in the employment contract signed by the employee. The employee reads the employment contract, gets acquainted with the provisions inscribed there, as well as the duty to maintain academic honesty rules and voluntarily signs it, thus expressing his consent and willingness;
- practice of discussing and solving the arising problems in collegial manner and an honest academic environment has been formed in GSU.

In addition, GSU Academic Honesty Policy is posted in the official website www.gsu.am. and the university students, their parents, heads and representatives of partner organizations are proposed to get acquainted with the requirements of policy, thus being familiar with the values adopted by the university. Academic Honesty Committee consisting of three students and two lecturers operates in GSU. The Committee gives annual reports on the cases inspected and measures applied. GSU students regularly fill in anonymous questionnaires where there is also a question about maintenance of academic honesty rules by lecturers. The lecturers are informed about the grades in the questionnaires given by students, and if the same lecturer is given a negative grade in the next questionnaire, then this matter is being dealt with in the next meeting of GSU Academic Honesty Policy. No GSU lecturer wants to attend the meeting of Academic Committee in the status of offender or to be a point of discussion for the students and his/her colleagues, therefore GSU lecturers consciously exhibit honest behaviour.

TRANSFERABILITY OF THE GOOD PRACTICE

For the higher education institutions interested in the innovation applied at GSU we attach importance to the following:

- working out and adoption of main principles and directions of anti-corruption policy by the university;
- adoption of Academic Honesty Policy as an important part of anti-corruption policy;
- envisaging a statute for composing Academic Honesty Policy;
- definition of activity procedure for Academic Honesty Committee;
- prediction of consequences of cases of academic dishonesty;
- consistent explanatory work with administrative and professorial staff, as well as students;
- clarification of provisions of academic honesty, ensuring publicity of Policy implementation process.

LESSONS LEARNT AND RECOMMENDATIONS

GSU succeeded in creating an honest learning environment, gaining public confidence, creating university corporate culture, promoting high moral values.

If possible, we would change the budget, by adding to it and providing financial resources to financially reward those lecturers who have received high grades by students. In case of having financial resources, we would recommend other institutions to financially reward the advanced and honest employees of the university.

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ANNEX: CASE STUDY TEMPLATE



La MANCHE: Leading and Managing Change in Higher Education

WP3: Changing Higher Education Institutions in Societies in Transition

CASE STUDY

1. INTRODUCTION

The case study is a user-friendly framework to capture, present and promote examples of good practices. Typically a case study would focus on a certain challenge and would show a successful way of dealing with it. In other words, a case study is a “story-telling” of a particular problem and its solution. As a rule a case study would present the wider context, the activities completed and the accomplished results. In addition, the case study would report on the innovative dimension of the good practices, the challenges faced and the lessons learnt. Ideally, the case study is a reflective account of a process that enables the different stakeholders and prospective readers to understand what was done, how was it done, who was involved, what went wrong, what should have been done differently etc. A good case study would not only provide a detailed description of the problem and the solution, but would include also a critical analysis of the described processes.

The 23 case studies prepared by the Partner Country higher education institutions in the La MANCHE project will compose the major part of the *Changing Higher Education Institutions in Societies in Transition* In-depth Study Report. The report is one of the main deliverables of the project and will be published on the project website. It will be disseminated to other

higher education institutions, policy makers and representatives of the civil society in the Partner Countries.

The purpose of the case studies elaborated by the Partner Country institutions in La MANCHE is to analyse the processes of change and modernisation in their national higher education systems and the ways in which major trends and demands in society and in the higher education system are addressed at the institutional level.

Each case study (min. 15. pages) will consist cover the following main areas:

1. Analysis of a challenge or a transformation and modernisation process underway in the higher education system of the respective country and its impact at the institutional level.
2. Detailed case study presenting a good practice from the respective institution of dealing with this challenge or process of transformation and modernisation described in the first part.

The challenges addressed by the case studies could be the following:

- internationalization
- increasing competition among higher education institutions
- decreasing public funding and limited financial resources
- outdated curricula and teaching and delivery methods
- irrelevance of graduates' skills to labour market needs
- students drop out
- demographic problems leading to enrolment decrease
- weak links between education, research and innovation
- increasing use of ICT in education
- weak knowledge-transfer infrastructure at the higher education institutions and lack of entrepreneurial, creative and innovation skills
- reforms in the national legislation leading to major transformations at institutional level
- specific transformations or changes in the political and economic environment that had a major impact on the institution.

The list is not exhaustive and if found appropriate, an institution may choose to write about a good practice in dealing with a challenge not identified in the list above. The partners could describe a full process, specific activity, tool, procedure, good practice.

2. CASE STUDY OUTLINE

The case study should feature the following topics:

- Case study title
- Executive summary
- Background information
- Type of the challenge or transformation and modernisation process addressed
- Description of the wider context
- Rationale and intended outcomes

- The process of introducing the good practice
- Resources required and used
- Facilitating factors
- Challenges and obstacles
- Innovative dimension of the good practice
- Sustainability of the good practice
- Transferability of the good practice
- Lessons learnt and recommendations
- Contact details
- References

The list of the topics to be touched in the case study is not exhaustive and additional type of information could be added if needed.

Font to be used: Arial Narrow, Size 12.

We wish you a productive and interesting writing process. Thank you for sharing your knowledge and expertise!

CASE STUDY TEMPLATE

CASE STUDY TITLE

Please, provide the title of your case study pointing out the main theme it will focus on.

EXECUTIVE SUMMARY (0.5 p.)

The executive summary should be written in a clear and concise way and should give an account of the key points addressed in the case study.

Please, write this part in the very end of the process of preparing the case study.

BACKGROUND INFORMATION (0.5 p.)

Name of the institution:

Short presentation of the institution (year of establishment, number of students, staff and faculty, number of programmes offered):

TYPE OF THE CHALLENGE OR TRANSFORMATION AND MODERNISATION PROCESS ADDRESSED

- Internationalization
- Increasing competition among higher education institutions
- Decreasing public funding and limited financial resources
- Outdated curricula and teaching and delivery methods
- Irrelevance of graduates' skills to labour market needs
- Students drop out
- Demographic problems leading to enrolment decrease
- Weak links between education, research and innovation
- Increasing use of ICT in education
- Weak knowledge-transfer infrastructure at the higher education institutions and lack of entrepreneurial, creative and innovation skills
- Reforms in the national legislation leading to major changes at institutional level

Please, specify:

- Specific transformations or changes in the political and economic environment that had a major impact on the higher education institutions

Please specify:

- Other

THE WIDER CONTEXT (4 – 5 p.)

Please, describe the wider context in which their institution operates. Please, focus on the challenge or transformation and modernisation process underway and provide information on its history, nature, political, social or economic background. This process could be specific for your country (e.g. a legislative reform, a demographic issue etc.) or of universal relevance (e.g. internationalization, increasing competition, increasing use of ICT in education etc.). If applicable, please, provide evidence (links, graphics, statistical data etc.) supporting the information presented.

Please, explain how the process described is influencing the functioning of your institution. What is its direct impact at institution level on the students, faculty, governance processes etc.

RATIONALE AND INTENDED RESULTS (0.5 – 1 p.)

Please, explain why your institution chose to introduce the good practice in question and what the planned results were.

THE PROCESS OF INTRODUCING THE GOOD PRACTICE (5 – 6 p.)

Please, provide answers to the following questions: What steps were followed in order to establish and continue the good practice? What were the key stages in the process of implementation? What activities were completed? Who was in charge of these, what was the decision making process, which stakeholders were involved etc.

Please, provide any type of evidence (photos, links, graphics, statistical data etc.) that would support your replies to the questions listed and make the account of the activities easier to follow for the prospective readers.

RESOURCES REQUIRED AND USED (0.5 – 1 p.)

Please, give account of the financial and human resources required and used in the process of incorporating the good practice. Who was involved and what type of investment was made in order to set up the good practice and to sustain it.

FACILITATING FACTORS (0.5 – 1 p.)

Please, describe the factors that contributed to the successful implementation of the good practice.

CHALLENGES AND OBSTACLES (0.5 – 1 p.)

Please, describe the difficulties your institution had to overcome in order to introduce the good practice.

INNOVATIVE DIMENSION OF THE GOOD PRACTICE (0.5 – 1 p.)

Please, explain if the good practice is considered innovative in the context your institution is operating in.

SUSTAINABILITY OF THE GOOD PRACTICE (0.5 – 1 p.)

Please, explain the follow-up of the good practice presented. Please, provide information on how sustainability of the good practice is guaranteed at your institution.

TRANSFERABILITY OF THE GOOD PRACTICE (0.5 – 1 p.)

Please, identify and explain the key points for effective practice for other higher education institutions willing to transfer your innovation.

LESSONS LEARNT AND RECOMMENDATIONS (0.5 – 1 p.)

Please, describe in details what worked particularly well, what would you do differently next time, what advice and recommendations would you give to other institutions?

CONTACT DETAILS

Name of the contact person:

Position at the institution:

Email:

Tel.:

REFERENCES

Please, list the sources and literature used when preparing the case study.

Please, if found appropriate, add new sections providing additional type of information.

**Project “Leading and Managing Change in Higher Education”
(La MANCHE)**

Tempus IV Programme



Tempus



Leading and Managing Change
in Higher Education

Project Number 530621-TEMPUS-1-2012-1-BG-TEMPUS-JPGR

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