Emerging Modes of Cooperation between Private Enterprises and Universities

National Report of Bulgaria (draft version)
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Introduction and methodological approach

Within the framework of WP5 — EMCOSU project the Business foundation for Education conducted a survey among companies and business associations to identify modes of cooperation between the private sector and UBC. Invitations to participate in the survey were sent out to more than 200 companies and employers associations selected following the guidelines of the project and the arrangements agreed upon by the partners. The respond rate was very low and later on we have to organize face to face and phone interveiws in order to collect a requested number of 100 filled-in questionnaires. The survey contained closed questions related to modes of cooperation, drivers for cooperation, as well as prevailing barriers. The conducted survey also allowed us to identify UBC outcomes and impact, lesson learned, as well as to get to know how Bulgarian companies perceive UBC. The survey was carried out from November 2013 till June 2014. Given the size of the company, 57 questionnaires were returned by SMEs and 35 were obtained from large corporations and 6 from micro enterprises. Sectorally, 19 questionnaires were returned by industrial companies, 46 by the services sector and 33 by the ICT sector. The results in Bulgaria are very promising, interesting and in many ways they show good modes of cooperation between enterprises and universities mainly related to graduates transition to the labour market (internships and placement programs, facilitated by the university career centers and career fairs initiatives). We also found more curriculum development and joint programs development initiatives.

All received questionnaires were saved in the electronic form. The paper versions are stored in ring folders. Collected data has been entered into template files drawn up by the project leader in order to be further analysed. The codebook for the questionnaire was used while entering data into the files. The following report presents the results of the survey.
1. Modes and Activities of UBC

In order to follow the EMCOSU project’s main objectives the sampling plan of the large scale survey in Bulgaria envisaged the inclusion of the companies which have already developed modes of cooperation with higher education institutions. However, the selection included also the companies without UBC in order to identify the major barriers, challenges and motives of possible future cooperation. The general distribution of the survey respondents is presented in Figure 1. Micro enterprises are those with 1 to 10 employees, SMEs with 11-250 employees and large enterprises are those with 251 and more employees.

Figure 1. Distribution by enterprise size

![Figure 1. Distribution by enterprise size](image)

Source: in-house survey analysis

Figure 2 represents the general distribution of the respondents by sectors. The survey included representatives of three sectors – industry, ICT and service, their distribution is presented below.

Figure 2. Distribution by sectors
In question B1 the respondents were asked about the extent of cooperation with universities in the following areas:

1. research and development (R&D) e.g. (inter)national projects, commissioned research;
2. mobility of academic staff (their training or research in your organization);
3. mobility of students e.g. direct recruitment, traineeships;
4. curriculum development and delivery (including university lectures);
5. adult education, training and short courses and other “lifelong learning activities”;
6. other.

Figure 3 shows the extent of universities and business cooperation for micro-enterprises, SMEs and medium-sized companies.

Figure 3. General distributions by modes of cooperation
As is seen from the graph the most popular modes of cooperation are curriculum development (including university lectures) and trainings and short courses. Many other surveys also underline that Bulgaria still needs to increase the numbers of academics and students that attend different mobility initiatives. R&D mode of cooperation needs to be improved with more motivation and joint driving priorities from both sides.

Figure 4 bellow represents the high extent modes of cooperation divided by size of the enterprises. It is logical that we see more involvement from SMEs and large enterprises in different modes of cooperation because micro companies usually do not have capacity (human, financial, etc.) to participate in different activities with HEIs. As is seen the large companies has additionally to curriculum development and trainings, joint R&D activities with HEIs.
The next figure represents the modes of cooperation by sectors. The in-depth data shows that industrial sector has more frequently R&D projects with HE institutions compared to service and IT sectors. IT sector enterprises are more engaged in curriculum development and teaching.

Figure 5. Modes of cooperation by sectors

Source: in-house survey analysis

We can assume that company representatives are often invited to participate in educational processes as invited lecturers or as organizers of additional presentations on specific topic. The case from Bulgaria (a company from the sector of food production) (CS 4) shows an
example of a company-delivered course: “Throughout the years our company has worked with different universities on various projects but the most significant is the academic course delivered by our employees named ‘Skills for negotiations’ which was a part of the Master’s program in Business at the university. The course comprised five lectures delivered by our specialists in sales, purchase, finance, human resources, quality, new products development and others. However, regarding the responses from the representatives of companies, company-based courses are still very rare, but it is more common to be invited as guest lecturers.

Taking the above into consideration, the results of the survey indicate that Bulgarian companies are changing their attitude — they have become more interested in cooperation between universities and business.

The survey (question B5) analysed how often Polish entrepreneurs are involved in projects carried out jointly with universities. The following areas were surveyed:

1. academic staff sitting on company management boards;
2. business people sitting in university boards;
3. participation in the activities of alumni networks;
4. cooperation with university career offices;
5. cooperation with institutes focused on university-business cooperation;
6. cooperation with business incubators;
7. active involvement of business representatives in study, teaching and research activities.

The next figure represents the existing cooperations between enterprises and HE institutions. The figure clearly presents that cooperation with career offices, alumni networks and teaching and research activities are the ones that are more commonly used in Bulgaria.

Figure 6. Cooperation between enterprises and HE institutions
During the last years we noticed that cooperation between enterprises and HEIs goes through career and alumni services and enterprises gradually increase their offers for soft skills courses and programs for students. At the same time the boards’ participation are not common in Bulgaria.

More than 70% of the enterprises participated to some extent in cooperations with alumni networks and career centers. The distribution is not different based on sector and follows the general findings. The representative of a marketing company from Bulgaria emphasized that the goal of the company’s presentation at the career office event is to present new marketing concepts to students and to motivate them to pursue careers in online marketing. Very often the most inspired students contact us after such events. We are glad to offer them internships if they are interested." (Bulgaria, case study 9).

It is clear from the survey results and cases studies that business – education cooperation is very important for the enterprises. They are more and more interested to support the HEIs to prepare better tailored to their own needs workforce.
2. Drivers and Barriers of UBC

In the survey the companies were asked to assess the importance of factors facilitating university-business cooperation. The following factors were assessed:

1. existence of shared motives;
2. financial resources for working with universities;
3. flexibility of universities;
4. interest of universities in accessing practical knowledge;
5. access to universities' research and development facilities;
6. close geographical distance of universities;
7. existence of mutual trust and commitment;
8. prior relationship universities.

The following figure illustrates the importance of individual factors.

Figure 7: Factors affecting cooperation

Source: in-house survey analysis

The obtained results show that shared motives is the most important factor for good cooperation. Prior relationship (45%), mutual trust (42%) and access to R&D (42%) were also perceived as important. The fact that shared motives were ranked as the most important factor for 60% of companies shows that companies were interested to work and invest their resources for joint cooperation with HEIs.
when their own current needs were considered. In many cases this fact creates some problems in cooperations because HEIs and companies have different time horizons. Companies usually are more interested in short time goals and finding appropriate workforce for their current needs, as the HEIs are more long term oriented. Prior relationships such as previous joint experience, personal relationships, etc. were also important for companies as factors for future cooperations with HEIs.

Given the size of the company, it can be said that factors important for all companies are equally important for medium-sized as well as large companies. Shared values are important for 55% of small and medium-sized enterprises (SMEs), for 77% of large companies and 50% of micro companies. The same tendency is seen for the shared values factor by sectors – 63% of industrial, 60% of IT and 59% of service companies had ranked it as highly important impacting the universities-business cooperation.

Bulgarian companies were also asked to describe the barriers in universities-business collaboration. The following obstacles were listed in the survey:

1. different modes of communication and language barriers between universities and business;
2. different time horizons between universities and business;
3. different motivations and values for universities and business;
4. difficulty in finding an appropriate partner at universities;
5. red-tape within universities and outside;
6. universities want to publish confidential results;
7. limited possibilities of knowledge transfer;
8. the current financial crisis.

Figure 8. Barriers of communication
Source: in-house survey analysis

Figure 9. High extent barriers of communication by size of the enterprise

Source: in-house survey analysis

Figure 10. High extent barriers of communication by sector
We can notice that each of the proposed barriers of communication is seen as quite problematic by enterprises. The top three listed by enterprises are – bureaucracy, difficult communication with HE institutions’ representatives and results’ confidentiality. These three barriers clearly explain the lack of R&D modes of cooperation in Bulgaria that we already discussed above. Another explanation of these barriers is related with legislative gaps and with legal protection of the industrial property rights in Bulgaria. At the same time in many cases enterprises and HE institutions have different driving priorities for joint projects that result in difficulties in communication between them. For example different time horizons as we discussed already above. The results slight vary for different size companies and different sectors but in general they represent the situation in the country and barriers for companies related with bureaucracy and lack of adequate legislation.

Of course we have good practices - one of the leading industry enterprises has declared “very well established partnerships with the leading technical HE institutions in Bulgaria - Technical Universities in Sofia, Plovdiv, Varna, Gabrovo (Bulgaria, case study 2).

The results of this part of the survey indicate that all obstacles are significant for respondents. They should be taken into consideration when undertaking activities for fostering cooperation between business and HEIs.
3. University and business cooperation outcomes, and impact, lessons learned

Companies were asked in the survey to define the extent to which the universities and business cooperation in joint research improved the following factors.

1. the performance of business;
2. the skills of students relevant to labour market;
3. the knowledge of the academic staff;
4. the practical skills of professionals from organisations;
5. the innovative capacities of the enterprise;
6. regional development and social cohesion.

The following figure illustrates the importance of the factors mentioned above.

Figure 11 Cooperation outcomes

Source: in-house survey analysis

The survey indicates that for majority of employers the university-business cooperation is mostly beneficial for students. In their opinion the cooperation helps students in gaining and developing skills important to be competitive in the labour market. Other important factor is the performance of the businesses that corresponds to already discussed factor of shared motives for cooperation between both sides.

The whole survey and answers to question A6 (skills of new graduates) clearly indicate that companies are convinced that skill as: working under pressure, team work, creativity and time management are critical for students’ employability. In other words, companies declare again those transfer all skills
are very important for them and they are ready to work with HEIs in order to improve those skills for students.

It is important to note that the companies see innovative capacity of the enterprises as also very important. We can argue that such capacity can be created through research or human development. The surveyed employers do see research as a potential way to improve their employees’ qualifications.

The majority of respondents do expect to that joint research projects will contribute to the improvement in regional development. Such effect is possible but we should underline the fact that the number of students and young researchers during the last recent years is decreasing. Many young people prefer to complete their studies abroad and this fact creates lots of problems for the HEIs. They compete for fewer students and usually do not get the best ones who study abroad.
4. Enterprises Perceptions of Universities and University-Business Cooperation

The majority of surveyed enterprises declared that university-business cooperation is of crucial importance both in curriculum development and training. Thus in their opinion it is very important that universities and business cooperate continuously in all possible areas. The next figure represents the opinion of the enterprises on certain general perceptions.

As it is presented in Figure 12, the majority of the enterprises (66.3%) believe in fundamental importance of the UBC for research and development. At the same time 31.6% of respondents believe that UBC should be upgraded for application and commercial exploitation. If we explore this question by sector we will noticed that primarily enterprises from IT sector believe that UBC should be upgraded for application and commercial exploitation. At the same time the representatives from industrial sector are primarily those who believe in fundamental importance of the UBC for research and development. This result represents the good will of the enterprises to cooperate with HE institutions for research and development but at the same time as is presented in Figure 4, the percentage of such projects is still very low.

Figure 12 Orientation of the enterprises

Source: in-house survey analysis

The surveyed companies are willing to start cooperating with universities with an aim to commercialise research results. The companies are aware of synergies such cooperation may lead to and are prepared to get involved.
The next figure demonstrates the perception of the enterprises towards future changes for HE institutions. All of the suggested changes have attracted the attention of the enterprises. The increase of the practical orientation of teaching has the highest percentage. The same conclusion can be made from the case study from Bulgaria (CS 10) that shows partnership between company from service sector and private university “to create the Entrepreneurial Academy, which will prepare business managers. The Academy is open to both students and young professionals as well as to anyone looking for career growth or simply wishing to change their career in a new and better direction. The program includes core courses required for a manager at corporate level - Entrepreneurship, Planning and Analysis, Human Resource Management, Finance, Projects Development, Modern Marketing Theory, Managerial Competencies, etc. The theoretical part is led by some of the best speakers from the university and the practical part - by top managers from the company.” (Bulgaria case study 10)

Figure 13. Future changes for HE

Figure 14. represents the opinion of the enterprises divided by sector on future changes for HE institutions. Again the practical education and teaching is very highly recommended by the enterprises but we also can indentify certain preferences for each of the sectors. The enterprises from the industry sector assign the highest extent to the internships and traineeships. We have good practices for internships presented by industry sector enterprises (CS 5) –“the company it is well recognized for the summer student internships as well as for the newly launched program “Young Specialists” which is comparatively new for the industry
in Bulgaria. The information about our activities is spread among students in different years of education and by professors and the academic boards. Our partnership with the universities contributed to the improvement of the quality of the recruitment process of specialists for vacant positions in the company. The process requires a constant improvement of the level of training of mentors and the colleagues who participate in coaching. These activities contribute to our success in the field of the social and corporate responsibility.” (Bulgaria case study 5).

The enterprises from IT and services sector point with highest extent the strategic cooperation between HE institutions and employers. The enterprises from IT sector would like also to see more R&D focus in future changes of the HE institutions.

Figure 14. Future change of HE by sector

Source: in-house survey analysis

The next figure represents the different channels used by enterprises for hiring HE graduates. Obviously new communication channels are online recruitment and internships. As we seen already the career centres are another recruitment channel for hiring HE graduates. In
Bulgaria career fairs are also very popular channel for hiring HE graduates and offering internships. The case from Bulgaria (a company from the service sector) (CS 1) presents career fairs option - “National Career Days Forum started in 2002. The first event, held in the capital Sofia, was visited by 38 participating companies only but for first time they started offering internships for students in Bulgaria. The forum quickly developed and in 2008 a record number of companies (180) supported the initiative. Since 2012 the forum is taking place in 7 major university cities in Bulgaria: Sofia, Varna, Veliko Tarnovo, Rousse, Svishtov, Plovdiv and Bourgas. It is organized in March and is well known and expected as the event where the summer internships of the leading companies will be announced. Over the years the biggest national forum for students’ internships and careers has been visited by 171 450 students and 717 leading companies have participated in the forum.” (Bulgarian case study 1).

Figure 15. Recruitment mechanisms for hiring HE graduates

![Bar chart](image)

Source: in-house survey analysis

There are no specific differences on recruitment channels for the enterprises from the three different sectors with the exception of the IT sector where additionally to online recruitment the usage of private employment agencies is significant. The reason behind this finding is the fact that the gap between the number of IT graduates and the number of open positions is very significant and the unemployment rate for HE graduates from IT faculties is around 0.3% for
academic year 2012/2013 according to the university rating system web site www.rsvu.mon.bg.

Next figure represents another significant issue related to UBC - the employability of the HE graduates. The employers have answered to the question “To what extent new graduates in your experience possess the skills?” for each of the presented skills. The general observation from this figure is the fact that graduates are well theoretically prepared in their field or discipline but lack the transferable skills such as team work, time management, etc. The ability to work in foreign language was problematic for HE graduates few years ago but we can see positive change in this direction.

Figure 16. HE graduates possession of skills

Source: in-house survey analysis

To conclude this section we have to underline again that companies think university business cooperation is important. At the same time they do not rely on this cooperation as major source for their workforce and for improvement of their business processes. It indicates that the universities still
need to adjust their work to the needs of economy. The survey indicated that there is a good will for cooperation but companies want to see their benefits and shared values from it. At this stage the cooperation is more seen as corporate social responsibility for bigger businesses instead of real partnerships.

5. Country conclusions

The survey results confirm that enterprises are interested to cooperate with HEIs in order to receive better trained workforce. The most common cooperation between the two sides goes through career offices and alumni networks. Enterprises are using them to reach the best students and to offer additional short term courses mainly for soft skills development. Curriculum development and trainings and short courses are also commonly used by enterprises in order to support HEIs. Unfortunatelly, R&D mode of cooperation needs to be improved with more motivation and joint driving priorities from both sides.

The survey confirms that one of the most important factors for cooperation between enterprises and HEIs are shared values of partners and prior partnerships. The enterprises are interested to invest their resources for joint cooperation with HEIs when they see their own short term benefits. In many cases the time horizons of HEIs and enterprises are different and they can not find mutual interests. Prior relationships such as previous joint experience, personal relationships, etc. are also important for companies because they rely on personal relations with academic side.

It is clear that companies expect HEIs to supply the market with well prepared graduates. Unfortunatelly, the educational system can not do it alone and seek for cooperations with the employers. According to a lot of enterprises, the main advantage of cooperation lies in acquiring practical knowledge and employability skills during internships, seminars, research projects. What is important is the fact that enterprises do not see HEIs as R&D centres and does not expect them to only conduct research. They rely more on their capacity to produce well prepared workforce.

Large and medium size companies are the most active in the field of cooperation with HEIs. They offer internships and short training courses, also attend career fairs and use career centers for their vacancies. They are significantly more involved in the preparation and implementation of curricula as well as in development of trainings, which enhance their competitiveness. Comparing the three sectors included in the survey we see that IT sector is far more involved in cooperation with HEIs compared to service and industrial sectors.
As a conclusion it is important to underline again that the competitiveness of Bulgaria depends on its capacity to innovate and to produce qualified workers for the knowledge society. This can be achieved by implementing joint UBC strategies in structured networks, which can mobilize resources and knowledge to respond to new market needs. This implies on continuous partnerships HE institutions and enterprises but also with policy-makers. Partnerships must be built on shared interests to solve relevant problems such as recruitment of HE graduates, R&D or skills development. They must be based on existing practices and common ideas with added value for both sides. They should rely on sharing responsibility and joint ownership of results. All partners benefit from increased quality in the curriculum, HE graduates well prepared to meet the needs of the labour market, a better return on investment in R&D and cost savings in training programs.