EMCOSU
Emerging Modes of Cooperation between Private Sector Organisations and Universities

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Emerging Modes of Cooperation between Private Enterprises and Universities – Insights of European Universities

WP6 INTEGRATED REPORT

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INTRODUCTION

The EMCOSU programme reinforces the link between education activities and higher education graduates' employability needs and promotes cooperation with higher educational tools in particular. Current major national and international mechanisms providing indications to contribute to this aim are closely related to cooperation between higher education institutions and enterprises, which represents the chief focus of the EMCOSU project (short for Emerging Modes of Cooperation between Private Sector Organisations and Universities). The current report addresses the following questions:

- Which are the most relevant modes of cooperation between universities and enterprises?
- What are the current characteristics of cooperation modes and their future developmental needs?
- Which are the key developmental drivers and motives for cooperation on the side of universities and enterprises?

In the framework of this project, the perceptions of higher education representatives about cooperation forms with the entrepreneurial sphere are explored, as are the motivations and obstacles involved in this kind of cooperation.

In today's quickly changing business environment, strategic university-industry collaborations play a crucial role in the development and maintenance of a competitive advantage. The Europe 2020 strategy holds major implications for Europe's universities; the European Commission considers that universities have a key role in achieving smart, sustainable and inclusive growth. This emphasises that higher education and research are the route to higher skills and higher levels of innovation, making the communication between the education sector and business essential for fostering innovation capacity. The aim of Europe 2020 is to create a closer relationship between enterprises and universities so as to increase employability, productivity and social cohesion.

The strong dialogue and cooperation between the education and industrial sector is essential and beneficial for both parties, it enhances the transfer of knowledge, establishes long-term partnerships, facilitates innovation as well as helps universities develop relevant curricula. In this way, graduates can gain skills that suit the needs of the labour market (LM).

The present EMCOSU summary intends to present the views of higher education leaders in European Union countries. During the university-business cooperation (UBC) study, 10 qualitative interviews were conducted with representatives of higher education institutions on their experience of UBC in five countries (Bulgaria, Hungary, Slovenia, Spain, Poland) and the EU level. This publication summarises the results of the interviews.

This report includes separate reports of the countries involved in the project about the views of higher education institutions, prepared within the EMCOSU framework. In this report, six summaries can be found from each partner. Each report consists of questions about the drivers of and barriers to UBC, institutional motives, current experiences and best examples. In addition, the developmental needs of universities are shown, along with policy recommendations and a conclusion.

There are many excellent examples for higher education-industry cooperation. This study seeks to present a clear picture of UBC in Europe from the viewpoint of universities, and to offer a better understanding of how cooperation between the two sectors can be strengthened.

1 BULGARIA

1.1 Introduction

As part of the EMCOSU project, 10 interviews were delivered to representatives of leading HEIs in Bulgaria, with the intention to collect qualitative data about the dimensions of UBC and compare the results with the outcomes of the interviews among employers.

	Name	Position	University	University profile
1	Proscenia Terzieva	Vice Rector	University of Chemical Technology and Metallurgy (UCTM)	Technical University
2	Prof. Dimiter Birov	Functional Rector, former Deputy Dean of IT Faculty responsible for relations with employers	Sofia University (SU)	The biggest university in Bulgaria offering programmes in all professional fields
3	Prof. Silvia Tzvetanska	Director of the Quality Assurance Centre	Sofia University	The biggest university in Bulgaria offering programmes in all professional fields
4	Prof. Zdravka Radionova	Vice-Rector responsible for relations with employers	Medical University, Pleven (MUP)	Medical University
5	Detelina Smilkova	Vice President	High School for Insurance and Finance (HSIF)	The first private university in Bulgaria specialised in the areas of finance, insurance and social insurance, management and marketing
6	Tolya Stoitsova	Vice Dean of the Mass Media Faculty responsible for relations with employers	New Bulgarian University (NBU)	The first private Bulgarian university, offering specialities in many professional fields
7	Ivan Evstatiev	Director of the Career Centre	University of Ruse (UR)	Technical and pedagogical university
8	Oleg Bozanov	Chief Secretary	University of Veliko Turnovo (UVT)	The largest Bulgarian university outside Sofia, offering specialities in the humanities
9	Prof. Iordan Bliznakov	Director of the Career Centre	University of National and World Economy (UNWE)	The largest and oldest higher education institution of Economics in South-east Europe
10	Prof. Neli Bencheva	Vice-Rector responsible for relations with employers	Agricultural University, Plovdiv (AUP)	The biggest university specialising in agricultural science in Bulgaria

1.2 Current practices and experiences of UBC

The most common mode of university-business cooperation is through **career centres.** The university career centre plays a very important role in the educational process by being a crossing point for students and employers. The Career Centre is an inseparable part of the contemporary education system in the university and one of the major driving forces for bridging the communication gap between business, academic circles and students.

Examples of career centre practices supporting UBC:

- Apart from organising activities connected with the professional orientation of the students, one major aim is to support effective partnerships between students and employers.
- The career centres keep in touch with hundreds of employers, institutions, branch structures and non-governmental organisations which: take part in the annual job fairs the career centres organise; promote their job vacancies and internship programmes, in some universities (such as VTU) they use the selection services offered by the career centre; and support talented students with scholarships.
- Many companies offer free practical seminars focused on employability skills, labour market and occupational trends, entrepreneurship and new developments etc.
- The feedback the career centres receive from employers (after internships, trainings and joint projects) is crucial for the revision of the education programmes.
- It is also a common practice that renowned business representatives are involved as lecturers in the universities. They make a great contribution to high quality education, helping students link theory with practice and offering specific practical competencies demanded on the job. NBU, for example, organises master classes that are delivered by business leaders and renowned professionals.
- Most universities are also recognised partners of many enterprises for joint initiatives – conferences, seminars and research studies, as well as project and innovation development funded by the European Community. In most cases, the departments and centres are responsible for UBC. In Ruse University, students are involved in R&D projects from the second year on.
- Employers also support new labs and/or equipment in the universities.
- All universities are proud of their long-standing partnership with enterprises on the local and regional level. In small sectors, such as metallurgy, the university also depends a lot on both alumni and personal contacts. Companies hire students directly from the university through the career office and offer them many scholarships and internships before graduation.

Curriculum development and update**.** All interviewees state that their university takes employers'/labour market needs into consideration in curricula development. Enterprises are involved in curricula development in different ways:

- the formal feedback the career centre collects annually is what is the most meaningful, according to all interviewees. Most career centres prepare reports for all specialities that faculties use to upgrade curricula in order to respond to labour market needs;
- feedback and direct involvement in curricula development from business representatives;
- non-formal feedback gained through personal contacts and during events – discussion forums/conferences, career fairs (most interviewees);
- joint projects for curricula upgrades based on employers' needs;
- all universities have joint master programmes, designed in partnership with business;
- feedback is reported through the active alumni associations;
- the university centres for quality assurance (SU, NBU, RU etc.) work closely with employers and collect feedback on a regular basis through employers' satisfaction surveys, a survey on skills needs; feedback on projects run by the university etc.; and
- the board of trustees in RU involves leaders from the local business community who meet regularly and provide invaluable feedback on the quality of the education.

1.3 Institutional motives for cooperation with business

Universities share various motives for cooperation with business:

- above all, student realisation (for all interviewees);
- prestige and recognition of the university as an acknowledged academic, innovation and research partner on the regional, national and European level; and
- the aspiration for high quality education and graduate competitiveness, as well as for employer and graduate satisfaction – matching LM demands with students' career goals.

1.4 Type of companies in UBC

Most universities collaborate with all types of enterprises, especially when it comes to internship programmes and graduate placement.

Having in mind that the Bulgarian economy is based on SMEs (forming 99% of the GDP), it is normal that small companies are very active partners of universities in research projects, internships, trainings, career fairs etc.

There are some sector-wise particularities of the chemical and metallurgic sectors, shared by the UCTM, whose partners are mainly large companies. They offer internship programmes and additional courses; SMEs usually hire one or two students as interns. All of them offer scholarships.

For the universities outside Sofia, a regional partnership is vital.

1.5 Barriers to UBC

The barriers vary depending on the sector specifics, the size, capacity and location of the university. Smaller universities and companies (especially those outside Sofia) usually have limited capacity for R&D projects and opportunities for cooperation.
For example:

- UCTM – The chemical and metallurgical sectors are very small and in some cases this can be a barrier to cooperation in different projects. There is a limited number of large companies that have the capacity to cooperate in R&D projects.
- MUP – Medical institutions in Bulgaria lack personnel because most young doctors prefer to work abroad. We even have difficulties hiring enough young medical practitioners for our own hospital.
- UR – Being situated in a small city like Ruse, we work mostly with local enterprises and rarely have access to those situated in other areas of Bulgaria. Our transnational cooperation with Romania allows our students to have different internship and mobility opportunities abroad during the course of their study.
- AUP – The capacity of our university is too small to offer adequate education to the desired number of future students.
- UVT – We have limited R&D collaborations with enterprises because our partners are mostly public-sector entities.

The biggest HE institutions like SU also face some difficulties related to UBC, such as coordination which requires relatively sophisticated IT systems, and low the feedback response rate from enterprises.

A common challenge shared by four of the interviewees is the current legislation (the Higher Education Act), which is assessed as rigid, old and inflexible for responding to the needs of both universities and business.

- Accreditation of new programmes, introducing and closing of programmes from the national agency takes a lot of time.
- In order to improve academic programmes, 70% of the professors should be habilitated, which is a huge percentage and acts as an impediment to attracting lecturers from the business world.

1.6 Major developmental needs of UBC

All universities are devoted to developing their strategic cooperation with business.
The universities aim at:

- improving their competitiveness and capacity for UBC (AUP);
- a focus on research and development – strengthening their R&D capacity through new projects (UCTM, UR) and innovation centres (HSIF, UR); introducing new joint initiatives (NBU) such as R&D and quality assurance projects (SU, UCTM);
- a focus on the long-term skill development of their students and increase the practical dimensions of education – enhancing quality education by investing in

human capital (SU, AUP), internships and business lecturers (all) and new training programmes (UVT) and new equipment (MUP);
- a focus on short-term skill development – offering continuing education and requalification for employees (UVT, AUP); and
- two of the biggest universities plan to concentrate on enhancing their career centres (SU, UNWE) – hiring new employees and opening career centre branches on the faculty level, in order to more adequately serve students and enterprises.

1.7 Benefits of UBC

The interviews with the universities reveal that some of the most important outcomes of UBC for them are:

- graduate placement and various attractive career opportunities available for students;
- employers' satisfaction with students' employability and practical skills;
- new joint projects and initiatives with enterprises;
- internship and training opportunities for students;
- new programmes and curricula, elaborated in cooperation with business in response to labour market needs; and
- access to new technologies and capacity for innovations.

1.8 National specifics

Cooperation with enterprises goes through faculties, personal contacts and the career centre. All interviewees from the HEIs in Bulgaria agree that the career centre is the most effective link in UBC. Prior relations based on faculty initiatives, personal contacts and alumni (especially in smaller towns and sectors) are the driving force for establishing UBC.

- Graduate placement and internship programmes, as well as curriculum development are the intersections of the interests and goals of both universities and companies.
- R&D projects are also considered an important area of cooperation; however, it is not a common practice yet and strongly depends on the initiatives and capacity for cooperation on the faculty level. In the chemical and metallurgy sectors, shared by the UCTM most enterprises are branches of foreign companies and benefit from the innovations of their headquarters; and
- in bigger and private universities, enterprises are also involved on the management boards/boards of trustees of the HEIs.

1.9 Conclusion

Drivers and factors of UBC

The key factors for effective UBC cooperation include the existence of common goals and sustainable partnership. Prior experience and personal contacts (through faculties and alumni) play an important role in establishing mutual trust and understanding.

UBC takes various forms, but the most effective link between universities and business in Bulgaria are the career centres as their mutual goal for both HEIs and enterprises is to have a well-trained and skilled workforce.

Other effective and common modes of cooperation are: internship programmes, joint research projects and curriculum development; participation of business people in practical (skill-oriented) training and on university management boards. R&D is an area which is still underdeveloped.

Although universities cooperate with all types of enterprises (especially referring to graduate placement), their size influences the mode of UBC. Usually large and medium companies, as well as large universities, have bigger capacity to cooperate in projects, internships, research studies, trainings and curricula development. This is especially the case for the smaller towns.

Barriers to UBC

Unlike Bulgarian companies which see the different communication modes, time horizons and motivational factors as the main barriers to UBC, the universities point out the lack of capacity and the rigid legislation as impediments to effective partnerships with businesses.

Benefits of UBC

Both HEIs and enterprises see graduates' skills relevant to business needs as the most important asset of UBC. Another common impact is the improved quality and capacity of both academic and business partners. Universities increase their opportunities to offer new modern programmes; better R&D projects, while business enhances its innovative potential and performance.

2 HUNGARY

2.1 Introduction

The EMCOSU programme reinforces the link between education activities and HE graduates' employability needs and the promotion of cooperation with higher education institutions. The main focus of the EMCOSU project is to strengthen the cooperation between higher education institutions and enterprises.

The EMCOSU team in Hungary conducted 10 interviews with representatives of the universities, and elaborated short case studies based on the answers. This report presents the findings of the interviews on the cooperation between HEIs and private organisations in Hungary, while also introducing findings related to the barriers and drivers of UBC, and the most successful cases of collaboration.

2.2 Current practices and experiences of UBC

The universities generally cooperate with enterprises in relation to apprenticeships, R&D activities and curricula development.

Nearly all of the questioned higher education institutions mentioned internship as a cooperation practice, where students spend their internship at an enterprise. At one university, a well-established system assists students in finding a practicum place, where the students can search in a database. At another institution, an online platform is assured for students so they can become informed about whether an enterprise has contacted the college. Management of the tasks related to student internship varies. At some universities, they are implemented by the departments of the university, while at others by the career centres or student organisations.

Besides, the most common activities are R&D where, in most cases, a company entrusts the university to prepare research or to implement joint tenders or common projects. One interviewee mentioned: *the university has the potential to create new added value.* The fields of the projects vary, depending on the main orientation of the universities.

Many universities also involve enterprises in their curriculum development or formulate dual training together. In this way, students can gain actual and useable knowledge. Moreover, at one university an enterprise runs courses in relation to its products at the university for free. For example, a software developmental enterprise lectures a course, including the provision of its experts and software, so that the students can get to know its software, and later on the students as the potential head of companies may think of their product first.

In addition, some universities ask the representatives of an enterprise to make a presentation at the university or conduct a whole course as a guest lecturer. Entrepreneurs also participate at exams, they qualify students and are also invited for entrepreneurial days, job fairs organised by the university.

Some of the best examples of UBC are:

- The DEMOLA BUDAPEST programme – an open innovation platform for enterprises and university students. Actual, market concept challenges and ideas are collected from enterprises. Multidisciplinary groups are established with 3-4-5 heads who elaborate project plans for these problems/ideas. If the enterprises actually use the elaborated plan, a contract is entered into and the enterprise buys a licence.
- The EKOL – Separation Science Research and Education Laboratory is the result of very successful cooperation. The aims of the laboratory are to realise development projects utilising gas chromatography (GC) and high performance liquid chromatography (HPLC) methods, to investigate the capabilities of the new techniques and perform trainings associated with the above techniques. The laboratory participates in the training of university students and also in the postgraduate training of PhD students.
- Pannon Model – The aim of the project is to improve cooperation on organizational level; to develop training, education and research programmes; to improve the attraction capacity of foreign students; as well as to develop a common mentor and career service. An important task of the project is to improve the training, education and research programmes, as well as to strengthen the practical system of bachelor training. The elaboration of 172 curricula and the adaptation of e-learning will be implemented, and internship opportunities will be extended. A new, united training system will be presented.
- Higher education cooperation for the water sector – Its aim is to support the development of the Hungarian water sector in both scientific and practical life. The project contributes to the assurance of professional supply, the mapping of sectorial R&D potentials, with this helping to preserve our water base in accordance with national and international strategies.
- Case study club – An enterprise presents a problem from its operations, and the students solve it. The students are also observed as they attempt to solve the case: there was one example where a case was successfully solved by the students and the enterprise employed them. Another example is when the leaders and HR managers of enterprises were involved in a HR development project in which they presented how they conduct a job interview, they held trial interviews, and proposed suggestions.

2.3 Institutional Motives for UBC

Most universities in Hungary mentioned financial matters as a motivation for collaboration. An increase in the number of researchers is also a driver for them in the cooperation. Besides, more practical and marketable training is important for them to

integrate the entrepreneurial practicum into the education. Due to such cooperation, universities can gain actual information, marketable training, and their competitiveness also rises. Their students can also encounter real problems, and have a more practice-oriented education.

2.4 Type of companies in UBC

The universities in Hungary cooperate with micro, SME and large enterprises. These collaborations are successful, and some universities do not perceive any significant differences during the cooperation. For internships, universities cooperate with companies of all sizes. It can be said that larger enterprises frequently contact the universities because of R&D, SMEs mainly cooperate in apprenticeships. Smaller enterprises often do not know how they can cooperate with universities, but the collaboration with them is simpler. The cooperation with large enterprises is not so difficult or complicated either; the cooperation can be equally smooth.

2.5 Barriers to UBC

The obstacles universities face are different, but they may share the same root, which stems from their operation. The following barriers are encountered during collaboration:

- Lack of time: it is hard to find an appointment for research or an operative discussion.
- Different ways of thinking of the two parties.
- The enterprises do not know well the universities, their capacities, infrastructure, research base as well as the cooperation opportunities, while the enterprises do not know about the researchers at the university.
- Establishing contacts is a hard task.
- Different interests: The enterprises have a different kind of thinking; the enterprises have a market-based view, while the university focuses on research.
- Enterprises can devote less and less sources to support universities and common collaboration.
- The enterprises are not really open in every case, they do not have time, they do not spend enough time on the cooperation with universities even though this would be in their interest on a long-term basis.

2.6 Developmental needs of UBC

Generally, it can be stated that universities need more entrepreneurial contact, they would like to strengthen the relationship, and establish closer cooperation. Since most companies do not really know the capacities of the university, they would like to

communicate their opportunities better. This could help in establishing contact with a wider range of enterprises. Also, they regard the interests of the students, they would like to have feedback about their education and would like to involve enterprises in curriculum development.
Some of the answers are presented here:

- Openness is needed on both sides. Both enterprises and universities need external relations, the isolation and barriers should be eradicated on both sides. The communication should be strengthened because enterprises rarely establish a relationship with universities. The enterprises do not have comprehensive information about the capacity of universities.
- There is a need to be able to measure the outcome of the cooperation. The enterprises would be motivated for collaboration if they could gain an allowance due to their cooperation.
- Unfortunately, the eventuality is very high in these cooperation forms. There is a need to involve more and more enterprises.
- The university needs more entrepreneurial contacts to ensure a wider range of placement of trainees. In addition, there is a requirement to improve communication between universities and enterprises.
- The university needs to gain feedback about the usability of the knowledge imparted. The university needs practical examples in order to transfer more and more modern knowledge.
- Sufficient education is needed at the place of a practicum.

2.7 National specifics

In the WP5 questionnaire, enterprises were asked about their point of view relative to cooperation with universities. Companies emphasised that a high level of bureaucracy is present at universities, they have a different way of communication, they do not speak the same language, and that universities put an emphasis on fundamental research instead of applied research.
Universities were asked to comment on the entrepreneurs' views about the cooperation. Higher education institutions admitted that bureaucracy is at a high level; this is considered a real problem, the conclusion of an agreement can take a long time. The reason for this is that higher education institutions have their own systems and, since universities are public bodies, they are bound by many regulations.
In terms of the two sides' different ways of communication, most universities accept this statement. As an example mentioned by one interviewee shows, different departments cooperate in different forms and with varying intensity with enterprises. The two parties have different interests in cooperation, different motivations – they speak different languages. Universities are not capable of changing as fast as the continuously changing market would desire, and also it is hard for universities to accept that they have to transfer

the protocol of the companies working in the business sphere. On the contrary, smaller colleges mentioned that they do not experience this phenomenon because there is a common interest to conduct a research study and this may be the characteristic of a larger university.
Regarding the theme of research, the enterprises mentioned that universities are more likely to conduct basic research; universities regard basic research as more emphasised. The representatives of the universities also mentioned that fundamental research is prominent, but they do not only focus on basic researches. this will probably change in the future; even nowadays they are more likely to also participate in applied research.

2.8 Conclusion

In summary, it can be seen that the universities cooperate with enterprises, but there is a need for further development. Universities realised what their own barriers are, and they would like to change these in the future. The aims of the universities and enterprises vary sometimes, but they feel that this cannot stand in the way of collaboration. For common purposes, they have to overcome difficulties and they should establish closer relationship. UBC is beneficial for both sides so they are striving for a positive change in the future.

3 POLAND

3.1 Introduction

This document is based on ten interviews with academics – persons who are responsible at universities for students' practices, cooperation with business and creating education programmes. The surveyed academics came from various academic centres – public and private from Poland – an industrial region of the south (Silesia), the capitol region (Warsaw), and the north (Baltic coast). The selection of universities was based on their reputation and size. Centres well-known, recognised abroad and popular among students were chosen.

The selection of respondents allowed the collection of objective data representative for the country not for a region or a city. This adopted methodology eliminated the risk of the overrepresentation of a single region (e.g. an industrial one).

The interviews were based on a standard set of questions. The last two were a direct reference to the questions from the survey where business and academic representatives were examined (the national report). These interviews confirmed most of the findings presented in the national report. In general, academics agreed with the thesis based on the survey. Some disagreements were seen and reflected the professional experience of the respondents. The national report is based on aggregated data (the average for the whole country) so individual interview results (views of a respondent) may differ from the whole result for the country. Discrepancy impacts the importance of the measured factors. Some respondents agreed with the order (resulting from the importance) of factors they were shown on the basis of the national report, in some cases the emphases were a little different, but in general the respondents agreed with the thesis.

In summary, the interviews with academics confirmed the results of the national report.

3.2 Current practices and experiences of UBC

Professional bodies at universities are connecting science and business (mostly large companies). At different universities this entails a different shape and structure, but the main idea is to create a platform where parties will be able to exchange expectations and ideas for better cooperation. No difference between private and public education is visible. At private universities, more business representatives are involved in the educational process.

The most important UBC outcome for universities is the knowledge of business needs. This is helpful in creating the best educational offer that assists a graduate find a job easily and quickly and helps business find an appropriate employee. Some universities are creating special funds which help with the commercialisation of inventions. The methods of commercialisation differ, it can be spin-off and spin-out companies, licensing and others. Inventions can be sold to business directly or be adapted (modified) for the purposes of the buyer.

Fundamental practices of UBC for students are internships, trainings and volunteering. All of the surveyed universities have their own career centres and a list of trusted companies where students can enquire about training. Also very important is the monitoring of an absolvent career. This allows universities to verify the effectiveness and usefulness of the educational process. Conclusions are used to expand the educational offer. An academic business incubator is another tool that helps students and the absolvent establish their own business. Thanks to the connections with business, new entrepreneurs are able to conclude contracts with trusted companies. Informal clusters are created: students – business – university, where start-ups created by students are subcontractors for large companies. The university acts as a kind of guarantor of this cooperation.

Universities are still aware that the processes of cooperation are insufficiently developed, yet they see goodwill on both sides of the process and do not see any need for legislative intervention in this area.

3.3 Motives for UBC

The main trigger of UBC is willingness to improve the educational offer. That was an answer given by all of the respondents. But in the case of private high schools, depending only on the quantity of students, this was the main factor of action. When public universities were asked, improving the offer was one of the motives, but not always the most important one. The universities point out that the stronger cooperation seen since 2014 is the outcome of the new Law on Higher Education, which forces higher education institutions to cooperate with business.

There is also a direct financial motive. Money from commercial research is used to equip laboratories and pay higher salaries for researchers. This also – indirectly – improves the educational offer, especially in technical areas. Cooperation also gives advantages to students directly. Thanks to traineeships in selected companies they are provided with up-to-date knowledge and practical skills. Students have an opportunity to gain soft skills (teamwork, stress management and problem-solving).

One of the mentioned motives is based on CSR. Another mission of the university is improvement of the region in the areas of education, culture and the economy. Stronger regions are more attractive for business because of their better qualified employees and more economic opportunities. In the public sector, a strong motive is a historical connection with business during the process of transformation in 1989. Many university researchers were engaged in that process, largely as members of advisory boards or experts helping companies change the mode of their production and acquire investors. This prior cooperation naturally evolved and companies still rely on professional scientific help.

3.4 Type of companies in UBC

The majority of companies collaborating with universities are big ones (large companies). It is hard to name one dominating field as this depends on various factors (e.g. actual projects, research led currently etc.). However, large companies are without doubt leading in cooperation with universities, especially in the field of teaching staff training and students' training. Big companies are interested in innovative solutions and are actively searching for ways to improve. In addition, such companies usually possess internal development plans and strategies, which results in the search for specifically educated graduates.

Large companies usually have funds available to execute joint projects with universities, while gaining money to proceed with such projects is a barrier for small companies. Another problem is training/internship programmes – they are also typically held by big companies. However, internships and trainings allow students to obtain skills they need in the labour market because they are no longer trained in a laboratory, and they work in reality where they can learn from their co-workers. The business community is very much interested in the benefits of the projects carried out. Before a company invests money, it has to calculate well which benefits a given project can bring.

Most of our respondents said that larger companies are more involved in the cooperation. The area of cooperation varies as well. Our respondents claimed that the large companies (due to their capital) more often than medium-sized ones cooperate with universities for training and traineeships. The only significant difference is the budget and restrictions that stem from it. Large and medium companies procure expertise and research, engage in conferences and seminars, sponsoring various events.

3.5 Barriers to UBC

The majority of respondents are convinced that the main barrier is bureaucracy and once again bureaucracy (e.g. formalism, plenty of forms to fill in). Another problem is the matter of legal restrictions on public procurement and other legal barriers to furthering cooperation. The university is a public sector entity – that makes the formal part of cooperation with companies more complicated. Procedures are illegible, there are excessive regulatory requirements. This state of affairs is definitely not working well for the development of cooperation between the two sectors. One of the other barriers is a problem with obtaining grants and starting a project itself. There are many cases where the lack of a grant makes the cooperation impossible. (There are no funds primarily for small businesses; large companies are doing much better in this field).

Another barrier is the different perception of time. Companies require a quick response, which is not always possible on the side of the university (e.g. procedures and preparation of relevant project documents are currently too time-consuming).

Funding for UBC – a lack of external funding, and also a lack of financial resources of business – is identified as an important barrier. Other significant barriers to UBC are:

- a lack of trust between companies and the university;
- a lack of funds for scientists to carry out research in an organisation;

- the unwillingness of workers to help in research conducted by scientists, a reluctance to evaluate; and
- a lack of time to make changes to the organisation in cooperation with the university.

To sum up, to intensify such collaboration we need to minimise the formalism (e.g. while applying for grants) and basic legal requirements. Simplification of the law and making tenders less formalised would significantly facilitate the mentioned cooperation.

3.6 Developmental needs in UBC

According to the respondents, development is needed in several areas in order to improve UBC. First of all, the barriers to UBC identified by the respondents and mentioned in point 5 should be overcome.

The respondents argue that in order to be able to further develop UBC the capital of Polish companies should be increased. Companies do not want to finance university programmes because they only have available limited funds for operational activities and do not have additional financial means for such investments. There is low financing for research commissioned by business and carried out by universities. Over 95% of companies are SMEs which are not financially prepared for UBC. On the other hand, large companies mainly with foreign capital have entered the Polish market with developed technologies and know-how and have not been interested in cooperation aimed at preparing tailored solutions made by universities. The respondents argue that since business does not support universities financially there are no clear expectations from business. The cooperation does not go beyond traditional activities and is based on interpersonal relations (rarely institutional). Only later personal relations may lead to inter-institutional cooperation. Universities are chiefly financed from public funds.

Moreover, the respondents claim that there is no good atmosphere for UBC in Poland because there is no mutual trust between business and universities. Efforts should be made to increase this mutual trust. Other factors that would work well in that field are common motives and the flexibility of universities. Another very important issue is the need to reduce the bureaucratic procedures of UBC. Law simplification and making the tender procedures less formalised would significantly facilitate the abovementioned cooperation.

Entrepreneurs and universities are aware of the fact that these days their collaboration is inevitable. However, to intensify such collaboration UBC needs to minimise all the formalities (e.g. while applying for grants) and basic legal requirements. Simplification of all requirements would facilitate mutual cooperation and minimise its cost. It is also necessary to analyse common needs and expectations in the form of a dialogue.

The respondents believe that UBC should focus on specific areas of the universities' expertise, in both the area of educational activities, and research and development. The respondents claim that this cooperation has not been sufficiently developed yet, as 25 years since the economic transformation in Poland is too short a period to work out

cooperation methods properly, contrary to Western Europe where there is a long-standing tradition of cooperation. Both universities and business are insufficiently prepared for this cooperation.

3.7 Benefits

The main benefits relate to the more practical orientation of curricula, which facilitate future employment of the graduates. The high employability of the graduates contributes to universities' prestige and attracts both Polish and foreign students. While developing their curricula, universities take labour market needs into consideration. University experts adjust the curricula to the needs reported by companies. Entrepreneurs explain what kind of knowledge and competencies of graduates are the most valuable from their point of view.

University-business cooperation also helps in:

- certifying professional skills;
- inspiring and finding solutions to specific problems;
- gaining operational and strategic management experience;
- creating joint training programmes closely related to various industry branches or even specific companies;
- establishing specialised programmes, specifically on the request of business;
- improving the attractiveness of the offer to students;
- statutory activities;
- financing;
- development of laboratories and equipment;
- benefits arising from the commercial use of scientific research results; and
- benefits for students (degree theses, student traineeships) – companies eagerly organise traineeships for students, especially three-month traineeships (obligatory in the curricula) because during that period it is possible for a company to assess the students' skills and offer employment.

Students' traineeships in prosperous companies handling state-of-the-art technologies are the main benefit of UBC, especially because they provide a practical dimension of university curricula.

Following tenders launched by companies which look for teaching staff, the universities organise training sessions commissioned by companies. Very often university staff also prepares expert opinions for companies. Cooperation with business makes it possible to maintain a high standard of laboratory equipment, additional remuneration for

academics, more opportunities for students, but also provides intangible assets – cooperation allows for a better understanding of the business, its needs and approaches.

3.8 National specifics

The interviews conducted confirmed the majority of the companies' opinions on the cooperation with Polish universities expressed in the country report. What is the most important for UBC is mutual trust. However, mutual trust requires long experience in successful cooperation. Currently, universities are only at the beginning of this process. The cooperation would become easier when we succeed in building mutual trust. Prior co-operation is also an important factor; it is especially visible in the curricula. Some curricula e.g. of postgraduate studies are prepared in close cooperation with business. Joint activities and universities' flexible approach are also important for cooperation.

The respondents also confirmed the identified barriers. UBC is hampered by red tape, mostly due to the legal status of a given university (public universities). It is less obstructive in private higher education institutions where the reporting requirements are lower. Besides bureaucracy, the different motivations of the partners are very important. As regards different motivation, for academics a crucial aspect is academic careers, which is not strongly related to successes in cooperation with businesses. However, the most recent changes to the regulation also require successes in UBC for a successful academic career. Therefore, this barrier will probably be scaled down in the near future.

The respondents also agreed that owing to the UBC students have significantly greater opportunities to acquire the skills needed for employment. However, it is very important to have a two-way exchange of information. The mere carrying out of research for an entrepreneur does not mean anything if it does not affect a change in the education process. Only cooperation in creating the content and organisation practices gives students skills desired by employers. Respondents also confirmed that large companies cooperate with universities more often than medium-sized ones in training adults and organising student traineeships.

3.9 Conclusions

One of the most important issues is to scale down the university bureaucracy to a minimum and strengthen the role of the specialised units that coordinate the process of setting cooperation with business. Especially Faculties should have be given more incentives to start the cooperation and greater flexibility from university management.

In Poland, it is also important to increase the competition between HE institutions. The competition is presently limited due to the regulations requiring the Minister's approval to increase the number of students above 2 percent. This regulation discourages universities from attracting a higher number of students and to thus improve the attractiveness of the curriculum. The development of HE-business cooperation requires a participatory approach to the strategic planning at the university level. Currently, it is sole

responsibility of the Rector. It would be recommended to include other stakeholders (students, professors, business people) in the strategic planning.

Universities should also be more active in offering cooperation to businesses. Presently, they mostly focus on identifying companies that could offer internship opportunities and sponsor university activities. Companies are more interested in research and information on technology development as well as its applicability, as well as inspiration for how technology may develop. Putting the stress on the companies' interests would also facilitate the companies' participation in curriculum development and internship opportunities. The offer from the universities needs to be more complex. The financing process needs to be adjusted to suit the needs of the companies. Companies should have more influence on the spending of public funds at HEIs.

4 SLOVENIA

4.1 Introduction

Within the framework of the WP6 – EMCOSU project, the Chamber of Commerce and Industry of Slovenia conducted a survey among higher education representatives from Slovenian universities. We focused on the three largest Slovenian public universities and one private university from three Slovenian regions. This methodology eliminated the risk of the overrepresentation of one region. The universities were selected according to the selection of sectors in previous work packages. Thus, we included faculties from the ICT area, from the industry sector and from the service sector. We also included one career centre. The interviewees from the universities and faculties were deans, vice-deans or rectors for activities related to UBC or representatives of departments appointed to develop UBC.
We prepared an invitation letter and questionnaire for the purposes of the survey. The survey was carried out from November 2014 to February 2015 and ten responses from higher HEIs' representatives were received.

4.2 Current practices and experiences of UBC

Slovenian universities have many experiences with UBC: from basic to applied research in different scientific/research areas, cooperation in different areas of education and especially in the area of knowledge transfer – the three major pillars of cooperation with business. In the framework of UBC, there are activities of cooperation within research, study programmes, Leadership Learning Labs, guest speakers from business, young researchers from industry, Centres of Excellence, Centres of Competence, cooperation through labs, institutes, cooperation with employers through career centres, incubators, start-ups, events, conferences, business forums....

Modes, organisational forms and contents are also developed according to the HE discipline or research area of the faculty/academy. A lot of cooperation is embedded in the study programmes (practical learning, theses, projects, experiments, co-creation of programmes...). Research in most areas is strongly connected to business or other institutions. Knowledge transfer takes different forms (incubator, career centres, applied projects, conferences, institutes...).
Some HEIs are active partners in major initiatives that are joining research institutions and private companies, such as a centre of excellence, competence centre, technology platforms etc. They can be one of the establishing members of technology networks as well or involved in start-up units when there is demand for specific knowledge in the market. Managing of research projects and participation in international networks and centres of excellence also enables the active participation of students in scientific research.

In the case of technical HEIs, the most common modes of cooperation with business are through applied research projects in connection with R&D departments of big companies and through orders from industry to the faculty for practical solutions for production or materials development. The second most common mode is through internships of students in industry departments where students gain practical skills and an insight into prospective employers and the industry meets their prospective employees.

4.3 Institutional Motives for UBC

The primary institutional motive for cooperation with business is to participate in the development of new knowledge, innovation and technology and to ensure knowledge is transferred to society. Cooperation with the economic sector promotes the development of study programmes at all levels of education. This type of cooperation is extremely important with regard to the development of applied research programmes leading to direct improvements in the economic sector. Cooperation enables the exchange of knowledge and creates additional funds for developing the quality of study. It also enables the better employability of graduates – internships are a good way of getting to know each other.

Different reasons encourage connections of HE researchers with business: (a) to get first-hand experience of problems that arise from practice; (b) to help research groups shape their research directions around main market trends and challenges; (c) to support industry partners with necessary research that can help them develop innovative products and services; and (d) to assure extra funds which are today crucial for the survival of research institutions and are improving the motivation of researchers as well.

4.4 Type of companies in UBC

The majority of respondents said that larger enterprises are more inclined to such cooperation and they are involved in the design of tailor-made programmes for them. They show a greater willingness to be engaged in larger and higher-risk projects. On the other hand, SMEs directly support smaller and shorter duration projects with lower commercial risks. It is essential that large companies have more personnel and their own R&D departments, and they usually have more systematically elaborated activities for particular functional areas, while small and micro companies focus on core functions (key features).

There are differences in approach and timeframe as well. Large companies have an approach that is more official than SMEs, and are oriented to more long-term cooperation, while SMEs often look for a personal approach within a very short timeframe.

A specific situation is seen in the Slovenian software industry. While software companies are developing all sorts of software, they only rarely develop products for a larger market. In other words, the IT sector is more or less service-oriented and not product-oriented. This results in the low export capabilities of the Slovenian software industry. The lack of large enterprises is another peculiarity that we are dealing with in Slovenia. The

accumulation of funds for research is very limited in micro companies and SMEs and only a few companies can afford basic research and programme-oriented research. Their lifecycle is much more intensive and requires quick time-to-market.

4.5 Barriers to UBC

Several factors represent barriers to university-business cooperation. There is a limited exchange of information among business and academic partners. Researchers are often unaware of the problems and needs of companies and do not see an opportunity in cooperation with them. In some cases, companies do not see the potential benefits of specific HE knowledge. The result is a mutual low level of trust, and misunderstanding. There are no concrete connections between business and the university at the level of strategic decision-making and HEIs do not find the right approach to business with R&D ideas.

On top of the lack of funds for scientists to carry out research in companies and the lack of EU projects, there is a problem of staff resources within universities that lead to lower flexibility and slow responsiveness. The university's main job is to conduct excellent scientific research and high quality teaching, which is its long-term orientation.

In the case of the information technology sector, one main barrier is the low capacity of IT companies to absorb innovations. Another huge barrier is the lack of legal grounds for practising various models of public-private partnership, including spin-offs, spin-outs, licensing etc.

4.6 Developmental needs of UBC

In order to facilitate successful cooperation with the business sector, the university must clearly define areas in which the development of knowledge is at a level that enables the development of applications for practical use in cooperation with the economy and in accordance with its needs. A key obstacle to the faster development of cooperation is the partially inadequate investment in research and development from both the part of the economy and the state and the partially inadequate efficiency of the research results.

A new understanding of the role of university teachers, whose obligation is no longer only to teach but to link university activities to the reality of the business sector, represents another significant obstacle, especially for those teachers unwilling or unable to adapt to the new circumstances and new economic situation.

The respondents argue that better financial support for research is needed, which is not related directly to cooperation. Special and accessible mechanisms for targeted applied research involving business partners are already developed, but should be financially enhanced and more accessible to funding schemes in the EU environment (smaller consortiums, more funded projects). An overall and significant reduction of research-related bureaucracy, especially in EC applications, is important for the development of UBC.

Better networking and information exchange among universities and business should be established.
Cooperation with the economy is also crucial for developing study programmes. This is the only way the university can capture the appropriate relationship, and strike a balance between a theoretical and a practical orientation.
Universities have to make a considerable effort to establish more strategic cooperation with companies that have the capacity to absorb innovations. This requires a mind shift in academia, where independence from the environment is crucial.

4.7 Benefits of UBC

UBC brings benefits to all parties involved: universities, students and business. Constant cooperation with the business world enables universities to have insights into real business challenges and obtain first-hand experience. Universities are able to develop the educational process according to the needs of business, to connect students with possible employers and to test their knowledge in practical settings. The practical orientation of curricula facilitates the future employment of graduates.
University-business cooperation creates additional resources (financial sources and expertise) for the university. Additional income supports further research development and improves the motivation of researchers. They recognise problems and challenges that have to be acknowledged for future research and this builds mutual trust regarding future cooperation/employment.

4.8 National specifics

The interviews did not confirm the majority of the companies' opinions on the cooperation with Slovenian universities expressed in the country report.

The Slovenian employers reported that the main barriers to UBC are the different values and motives and the bureaucracy within or external to HEIs. The majority of respondents generally agreed with this statement. However, it should be considered that the process of transition taking place in the business sector and influencing the development of public universities is the key to understanding UBC in Slovenia. In the former socialist system, universities were merely educational institutions, while large and powerful national institutes conducted scientific research. Through the Higher Education Act introduced in 1993, universities became public institutions with a legal personality. Universities thus began to develop as both research and educational institutions responding to the needs of students, promoting innovative open technologies and facilitating knowledge transfer, while recognising the importance of sustainability and social responsibility. However, there is still a lack of incentives, proactive ideas from the area of business and from universities as well.

Regarding the statement that UBC should be upgraded for application and commercial exploitation, which is believed by more than three out of four Slovenian employers, the

universities partially agree. In their opinion, this 'upgrade' has to be done very carefully so as not to lose the independence of the universities and business should be also be prepared to pay/invest and actively participate in such work as well. Active and efficient business-oriented participation is required from both parties to achieve the stated objective. Study programmes should develop employable graduates, in collaboration with the economy. At the same time, the knowledge obtained by the students must respond to the needs of the environment. The key is the knowledge that enables an individual to search for a wide variety of development-oriented and innovative solutions. This area will flourish only with the collaboration of the faculties, enterprises and students. All three elements of the triangle must participate equally in the development of the skills, experience and competencies of students. The main purpose of university is to create excellent research, develop science and provide high quality teaching programmes and so educate and create employable graduates. The third pillar is knowledge transfer and this is where we need a better understanding of the HE system, proper enabling and financing and even co-creating together new organisational forms for knowledge transfer.

Slovenian employers reported that HE should increase the practical orientation of teaching. Some universities believe that HE should make students independent and capable of adapting to different situations, which usually requires a good understanding of fundamentals, forward-thinking and the development of problem-solving skills. The theory is the best way for finding practical solutions since it allows a multi-layered approach to specific problems and the search for new solutions. It is crucial to gain new knowledge and expertise, and the possibility of its use in the development-oriented working and learning environments. Still, there should be a sound combination of both theory and practice.

4.9 Conclusion

We noticed a slight difference between the respondents deriving from the public sphere (HEIs) and private companies.

In Slovenia, the general situation shows that the cooperation between HEIs and companies could be enhanced and there is still a lot of space for improvement due to the very limited information exchange among business and HE partners. In order to facilitate successful cooperation with the business sector, the universities must clearly define their areas with the greatest potential for the development of knowledge and applications for practical use in cooperation with the economy and in accordance with HE's needs. Several networking and information exchange platforms among universities and business have been established, although they should be used more strategically and more efficiently.
The bureaucracy in setting up formal cooperation (especially in the almost non-existing cases of joint intellectual property rights) should be reduced. To expand PPP cooperation (including spin-offs, spin-outs, licensing etc.), the legal grounds for implementing various public-private partnership models should also be simplified, quickened and used more

efficiently, driven especially towards the generation of income from IP rights, for both the HE institutions and the other collaborating partners.
Study programmes should be developed in collaboration with universities and companies. The result of HE must be employable graduates, their knowledge they obtain from HEIs must respond to the current and future needs of the business environment.
The technology and knowledge transfer from HEIs to companies should be supported in terms of financial awards for the inventors (professors) and also through equal possibilities for career progression (habilitation) among basic and applied research providers.

We noticed a slight difference between public and private universities, which are more proactive. In addition, we can notice that depending on the type of university – those with technical, business management, ICT, social sciences education programmes had already developed more profiled cooperation such as involvement in Centres of Excellence, Centres of Competence, cooperation through labs, institutes, cooperation with employers through career centres, incubators, start-ups. These modes of cooperation should be extended.

5 SPAIN

5.1 Introduction

All interviews conducted in the WP6 package are very much related to the WP5 survey but concentrate more on the views of higher education managers. Out of eight interviews conducted, six universities were private and two were public. An interview was conducted by requesting (by email) the questionnaire to be completed and each person was contacted directly by telephone and in some cases direct visits were made to get the interview done. Contacts from universities were selected randomly. All of those who responded to the interviews were either directors of an office for relationships with companies/research results transfer office or professors of the universities. All those who answered the questionnaire had knowledge about the UBC activities of their universities.

5.2 Current practices and experiences of UBC

It can be understood from the interview responses that all of the participating universities have Research Results Transfer Offices, Science Parks, an Innovation Campus and Business Incubators and they coordinate university-business relationship activities. The main activities of these departments/offices are as follows:

- Encourage and support academic activities to attract national and international level projects
- Diffusion of entrepreneurial culture among university faculty (especially for professors from science-technology disciplines)
- Conducting specific internal training courses on the management of intellectual property rights
- Offering a research contract for technology licensing and for spin-off creation which would provide technical assistance and advice to firms for specific purposes and needs
- Collaboration in R&D, patent registration, providing expert opinions and doing assessments, and special training for companies
- Inviting investment funds sponsored by private and institutional investors, which would provide financial support for researchers and professionals
- Designing nationally recognised degree programmes in which students partially have to work in companies
- Participation in EU-level and industry-collaboration projects where students do real-life projects in classes
- The creation of technological enterprise niches linked to research institutes
- Scholarship programmes as part of university-industry group actions

In all of the practices and experiences of UBC, universities ensured the participation of their students and professors. Most actions were concentrated on supporting industries to obtain high quality research results and have their results patented. University or

enterprise relationship offices were providing expert advices and opinions to companies and, therefore, many opportunities to engage in collaborative projects.

5.3 Institutional motives for UBC

It emerges from the interview result that there are social, economic and institutional motivations for universities to engage in UBC. From a social perspective, the respondents believed that UBC activities are very important for fulfilling the third mission of the university, i.e. to transfer results for social progress. It was noted that a relationship with business would help teachers, students and researchers go for different ways that would help them facilitate their role in society. From a social service perspective, universities acknowledge enterprises as final customers and the university as a partner, thereby achieving a better balance in knowledge, skills and attitudes for the professional development of business administration. One of them observed that UBC is important for them as students will put into practice the knowledge they acquire from the world of practice.

From an economic point of view, some of them considered UBC as a fund-raising activity because there is a need to substitute the decreasing public funds for research with private financial resources. In addition, one of them considered that UBC is part of their departmental activities as private investors are on the Board of Directors and they also function as experts in training activities.

From an institutional point of view, respondents suggested that UBC is a way to sell the company's institutional academic prestige, while the ranking of a school shows the acceptance of students by companies. In addition, UBC is an important part of the functioning of universities' research departments as most universities have several departments that run collaborative projects with enterprises.

5.4 Type of companies in UBC

In relation to the type of companies in UBC, three interesting patterns were observed. First, three of the respondents suggested there are differences in UBC based on size; second, two respondents suggested there is no difference in UBC on the basis of size and, third, three respondents suggested that size does not matter in UBC.

Those who suggested there are differences in cooperation indicate that the size of a company is an important matter when it comes to the intensity and manner of work. According to them, large enterprises opt for long-term projects whereas SMEs collaborate in small research projects and basic applied research. When considering students' practical opportunities in large enterprises, students can go through different departments and obtain a broader view of the company, whereas this is not offered in small companies.

While suggesting that there are differences in cooperation on the basis of size, two respondents indicated that most of the time UBC is attractive and preferable for large enterprises. As large and small enterprises have different needs (a different ability to

specify their needs), different cultures and different abilities (knowledge and know-how) to interact with academic researchers, there are differences in the level of collaboration. One respondent added that small enterprises are sometimes family owned and do not have financial resources to support collaborative actions and in R&D, whereas large enterprises have R&D support allowing them to conduct specific projects related to the immediate interests of the company that would result in immediate growth and development. In addition, big businesses have resources to generate their own research units and they can recruit university staff that will do part-time jobs for them.
It was more interesting to note that three of the respondents suggested that size does not matter and affirmed that learning do not depend on size and so they do not separate company actions into UBC practices on the basis of size. One of them adds that size does not matter, but the important factors are the leaders of R&D departments and their mentality.

5.5 Barriers to UBC

When considering barriers to UBC, the respondents gave answers in three main ways, i.e., barriers which are common to universities, in enterprises, and common to both. The following are the important barriers mentioned by human resource managers based on their cooperation activities in universities.

- There is a lack of a common university space, which is imperative for the creation of Europe, where there is the promotion of the mobility of citizens, an understanding of the richness of diversity and culture etc.
- A lack of understanding of the changing needs; to design new titles, improve teaching methods and evaluations, the adaptation of new technologies. Changes in these aspects are very difficult.
- Academic institutions are not flexible enough (in terms of contract typologies and bureaucratic conditions often imposed by the national government) to respond quickly to firms' needs.
- Companies just want cheap labour and practices are untapped by students because tasks realised in the company are not related to their studies. Therefore, cooperation activities are difficult in some cases.
- There is a problem with regard to the duration of the internship in each centre and in some centres such practices are not mandatory so students come to the market without knowing real business world practices.
- Companies usually want students to stay longer and spend more time in the company, while they are offered short-term practices. So there is lack of preferences on the part of students.
- Companies do not have enough knowledge of what the university does.
- Although languages are the same, there is a lack of understanding between universities and companies.

- Timings are different for both universities and enterprises, therefore difficulty exists in cooperation between them.
- There is a lack of the resources needed to divert to this cooperation and little time for pushing and leading the commitment that cooperative education shall evolve.
- Difficulty in achieving a better balance in knowledge, skills and attitudes for professional development and a difficulty in designing the 1st degree in business administration where enterprises are involved in cooperation.

5.6 Developmental needs of UBC

In general, all respondents agree there is a great need for UBC in future; for the benefit of the universities and also to promote business. Therefore, they accept that HEIs should consider cooperation with enterprises as a fundamental part of their mission, adapting their structures to perform collaboration and that companies should develop through their representative bodies positive policies to foster collaboration. To support these initiatives, government must adopt incentive policies to stimulate business investment in training, research and development. In addition to all of the above points, most respondents admitted that UBC is relevant for social development as it would contribute to regional development, technological innovation, highly skilled labour and a source of expertise, advice and a usable investigation by the company and universities.

Adding some general points, some respondents suggested the developmental needs of UBC according to specific reasons. There are:

- For universities, it is important to ensure a broader diffusion of UBC culture among researchers.
- Help to make specific internal policies to make UBC outcomes just as important as research outcomes for career progress purposes.
- As entrepreneurship is important for a business school, UBC is very important in that educational activities can be linked and supported by enterprises' activities.
- As real-life projects (learning by doing) are in great demand, UBC participation is very important for practical training.
- UBC in more subjects and more languages would provide more placements abroad.

5.7 Benefits of UBC

The respondents believe that UBC has positive benefits for both higher education institutions and enterprises. As these are respondents from universities, some of their opinions on UBC activities in universities follow:

- To achieve a better balance in knowledge, skills and attitudes for the professional development of business administration.

- As the world is moving towards entrepreneurship and knowledge being everywhere, education has to be more concrete and more experiential. Therefore, UBC should support the production of experimental knowledge.
- UBC could be a good process to bring (part of) academic research closer to the needs of society at large and to stimulate investments in high-tech sectors.
- UBC establishes a bond of understanding between both parties, stating the competitive advantages and weaknesses, without forgetting the intermediary between the universities, which faces the market armed with this first professional experience.
- Without a relationship with business, university teachers, students and researchers operate in very different ways; teachers, researchers and students must have in mind that the purpose is to facilitate the life of society. UBC in such a situation facilitates this link.

5.8 National specifics

All respondents believed that the Spanish system is different from all other countries and there are several policy and administrative difficulties to overcome to realise any kind collaborative programmes between universities and enterprises. Some of the national specifics are as follows:

- More time should be spent to achieve the perceived value.
- Academic institutions are not flexible enough (in terms of contract typologies and bureaucratic conditions often imposed by the national government) to respond quickly to firms' needs.
- Spanish firms indeed demand a stricter correspondence between academic programmes and practical market needs. Nevertheless, they recognise (at least for the case of the author's institution) that a great effort has been made in the last few years to improve the 'practical' component of training programmes, mainly as a consequence of the Spanish academic system adopting the "Bologna agreement".

5.9 Conclusion

Higher education managers from different universities from Spain revealed some important facts in relation to collaboration activities with enterprises. All of them consider that UBC is very relevant at this time of change and UBC can promote entrepreneurship activities that would help universities move more towards real-life educational programmes. At the same time, the teaching and evaluation process remains the same. Therefore, they suggest policy recommendations to develop new degree programmes that would create more relevant professionals and result in job creation.

6 EU LEVEL

6.1 Introduction

The qualitative interviews among higher education managers on the EU level were implemented with representatives of HEIs from several different EU countries, namely Denmark, the Netherlands, Croatia, Italy, Ireland, the United Kingdom, the Czech Republic, Greece, Lithuania, and Belgium. The interviewees were selected from existing networks of the project partners' contacts and were recognised as competent experts in UBC within their own institutions. They are either the head or director of centres responsible for the transfer of knowledge, entrepreneurial development and innovation, or vice-deans for educational activities and representatives of career centres. Most interviews were carried out by phone and later the transcripts were made into interview summaries. Some interviews were also conducted in written form due to the preferences of the interviewee.

6.2 Current practices and experiences of UBC

Representative of universities included in the sample reported they are engaged in several different modes of activities with business. One of the most common modes is cooperation in research and development, although they also reported the inclusion of business people into curricula development, which in some countries is even an accreditation demand. One interviewee reported that business people are not included systematically in curricula development but only concern particular topics within study programmes. Some interviewees reported the inclusion of business people on the university's advisory board and that they also cooperate with companies to quite a large extent regarding internships and practical training of students, and also by inviting business representatives as guest lecturers. Two interviewees also pointed out the importance of entrepreneurship courses and providing students with entrepreneurial skills to enable them to understand how business runs, and two universities emphasised their career days and visits by companies to the university.

However, the interviewees also reported particular cooperation modes:

- Sharing the CVs of students with a database of companies they have
- Study groups dealing with particular problems from industry
- A networking evening for companies and a university researcher to discuss innovation and possible cooperation
- A department of the university which is responsible for linking research results with industry possibilities, it provides support for academics to create strategies for commercialisation, support for intellectual property and support in finding funds.
- An annual survey among employers' associations on graduates' competencies and skills.

6.3 Institutional Motives for UBC

One of the major motives for university-business cooperation reported by almost all interviewees is the development and support of students' skills and linking theoretical knowledge with practical knowledge. The interviewees believe that the 'real-life' experiences the students obtain from the industry (internships, research projects etc.) highly improve students' chances in the labour market and thus have more chances to become employed after they graduate.

Another motive is closely connected with the research activities of universities since cooperation with business enables researchers to gain an insight into what is important in business and to gain the application perspectives. Thus, they can also identify market needs. One interviewee also reported that cooperation with business also provides the university with access to research equipment.

The motives for UBC also concern funding opportunities since (as two interviewees noted) the public funding of universities is being reduced; therefore, they are forced to look for external resources. One interviewee also stated that UBC supports the regional labour market through the development of innovations and inventions.

6.4 Type of companies in UBC

The interviewees agree that there are differences in cooperation with SMEs or large enterprises, although they have different ideas of which companies are better to cooperate with.

The characteristics of cooperation with SMEs are the following – they are more informal, quick and innovative and the legal procedures for the cooperation are not so demanding. However, the willingness to cooperate with universities depends highly on the type of management SMEs have in place. One interviewee also reported that SMEs use university facilities more often since they cannot afford their own, but sometimes it is difficult for the management of SMEs to find appropriate persons within the university. SMEs are also willing to be included in UBC especially regarding research activities as they have fewer resources to do this on their own.

The interviewees stated that larger companies are usually well aware of the need to cooperate with universities but, on the other hand, they have an adequate amount of their own research activities along with resources and facilities to support these activities. Large companies usually also offer greater variation in internship positions and are more able to accept students. They usually also have a higher level of experts.

Regarding sector-wise particularities, one interviewee reported that companies from the service sector are less willing to cooperate than industry-sector companies. Otherwise, a few interviewees pointed out that UBC is especially developed with companies engaged in medicine and biotechnology, life sciences and IT as these companies are usually more innovative, trendy and put a bigger emphasis on new knowledge.

6.5 Barriers to UBC

The interviewees reported on different barriers they face with when it comes to cooperation with business. One barrier mentioned by several HE managers was the protection of intellectual property rights since this area is still somehow not systemised. Some interviewees mentioned the weak networks between academics and business people with the outcome that employers cannot find the appropriate staff or department within universities for possible cooperation. A few HEI representatives also reported that universities and business have different interests and expectations regarding the cooperation and they often speak a different language. One of the interviewees stated that business also expects university study programmes to include more technical knowledge, but on the other side the higher education managers support the academic orientation of universities. Other barriers mentioned in the interviews deal with internships, as companies do not provide appropriate work for students who are instead there for technical and administrative support, with one interviewee pointing out the influence of the economic crisis in the sense that companies now have different priorities and problems to be solved, and another respondent stating that publicly funded entities, which is what most universities are, have limited possibilities to establish spin-offs and start-up companies. There are also difficulties in receiving public funds for research.

6.6 Developmental needs of UBC

The higher education managers mentioned a range of various activities of universities that still need to be developed in order to enhance UBC. They are:

- To increase the interest of staff in UBC
- To help faculties, departments and staff get in touch with business
- To inform business what a university offers in terms of knowledge, technology, facilities etc.
- UBC can provide information and a good insight into market needs and employment opportunities with respect to the future development of study programmes
- To ensure qualitative internships and to provide students with appropriate positions inside companies
- To receive more money from the cooperation
- To provide students with entrepreneurial skills
- To focus on SMEs and to establish strategic alliances and agreements with large enterprises
- To invite high-tech companies to use the university's facilities and to help to innovate companies
- To become more flexible.

6.7 Benefits of UBC

The higher education managers agree that UBC improves the knowledge and skills of students and vastly increases their job opportunities. It also offers better quality teaching processes through involvement in study programmes activities and provides an insight into the 'real' world. University-business cooperation also supports the involvement of universities in the development of new products and innovations and provides the most updated information from the labour market. Besides getting to know what is important and which problems need to be solved in the industry, UBC also enables the development of networking, social capital and institutional image. Moreover, it also offers funding opportunities.

6.8 EU specifics

The higher education managers made comments on the general characteristics of UBC that were obtained through the analyses of the large-scale survey. They responded to the following statements:

- In general, the employers reported that one of the biggest barriers to UBC is the bureaucracy within or external to higher education institutions, the different time horizons and the different motivations and values.
- In general, the employers reported that the main developmental needs of universities are to develop strategic cooperation with business and to increase the practical orientation of teaching and enhance traineeships.
- In general, the employers reported that the key drivers of UBC are the existence of mutual trust and commitment, and the existence of shared motives.
- In general, the employers reported that UBC chiefly improves the skills of students that are relevant to labour market needs, the innovative capacities of enterprises and the knowledge of academics.

Most interviewees agreed with the provided statements but sometimes only to a limited extent. They are aware of the bureaucratic obstacles, but one interviewee reported that for this purpose the university has established a department to support UBC and to provide more flexibility in this cooperation, while one interviewee was opposed to this analysis, stating that in the experiences of their institution universities often react faster than business.

Higher education managers also emphasised that universities should retain their basic fundamental research and thus cannot include too many practically-oriented courses since otherwise the universities will lose their primary role.

Most of the higher education managers also support the importance of shared motives and interests to enhance UBC, yet they also stress that universities should respect the profit orientation of business and business should respect basic research and academic freedom.

The interviewees also agree that UBC in the first place improves the skills of students and their employability chances.

6.9 Conclusion

The importance of university-business cooperation was also stressed by the representatives of HEIs from various EU countries. In most of the institutions included in this qualitative part of the research, different forms of cooperation with business exist, mostly through research and development activities, internships and the participation of business people in the process of study activities. However, some higher education managers also reported other modes of cooperation which are not so common – these are different networking activities, the establishment of departments for UBC etc.

According to the responses of HE managers, UBC first and foremost improves the skills of students that are relevant for the labour market, and some interviewees stressed the importance of providing entrepreneurial skills to students already during the time of the study process. Cooperation with business also supports the research and development activities of universities, but one cannot neglect the funding opportunities that such cooperation might bring.

Similarly as the representatives of companies, the HE managers reported some obstacles they face with when it comes to cooperation with business or even before – bureaucracy and different motives and interests, but they also pointed out the issues of the protection of intellectual property.

To enhance UBC it would be beneficial to put more emphasis on networking activities among universities and business and to establish understanding between each other. The two stakeholders should learn more about each other's activities, possibilities and interests in different modes of cooperation.

CONCLUSION

Our aim with this report was to present the overall insights into UBC. While there are several exceptions, cooperation between high education institutions and business is still in the early stages of development. However, there are signs that recognition is now growing of the values gained from these collaborations. The present report found that UBC is influenced by several factors, including the perception of the benefits as well as the barriers to and drivers of UBC.

It may be observed that business, universities and students all value and realise the benefits that the collaboration provides, and would like to strengthen it in the future.

There are many ways in which cooperation activities take place, ranging from cooperation in the design and delivery of courses, through the mobility of staff and students (for varying durations) to providing resources and facilities. In practice, most cooperation activities involve more than one form of cooperation. The level of cooperation may also change over time as activities mature, evolve, or reach the end of their lifespan.

APPENDIX

Grant agreement no.: 2012-2948/001-001

WP6 questionnaire: HE Managers (draft)

Interviewee Details:

a. Name of the High Education Institute:
b. Type of the High Education Institute (orientation, faculties):
c. Name of the respondent:
d. Position:

1. What are the current practices/experiences of your institution regarding UBC?
   - Major success story, what you have learnt
   - What are the most common modes of cooperation with business in your institution?

2. What are the institutional motives for cooperation with business?

3. What are differences between micro, SMEs and large enterprises in UBC practices? Do you think that there are sector-wise particularities?

4. Where do you see the major developmental needs of your institution regarding cooperation with business, and why?

5. What are the major barriers on your side to cooperation with business?
   - Can you explain in concrete terms the most interesting experience

6. In your view, what are the main benefits of UBC for your institution and students/graduates?

7. Do you take into consideration the employers'/labour market needs in curricula development and how much are enterprises involved in it?

8. National specifics (please choose from your analyses):

   Example for SI: Please comment – Slovenian employers reported the main barriers to UBC are different values and motives and bureaucracy within or external to HE
   Please comment – More than three out of four Slovenian employers believe that UBC should be upgraded for application and commercial exploitation.
   Please comment – Slovenian employers reported that HEIs should increase the practical orientation of teaching