The State of European UBC: a Practitioners' Perspective

11 Expert-interviews on the topic of HEI-Business Cooperation.

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Abbreviations

EC	European Commission
EEA	European Economic Area
EU	European Union
EUA	European University Association
HEI	Higher Education Institutions
ICT	Information and Communication Technology
IP	Intellectual Property
IPR	Intellectual Property Rights
LLL	Lifelong Learning
MUAS	Münster University of applied sciences
NQF	National Qualifications Framework
PhD	Doctorate of Philosophy
R&D	Research and Development
SME	Small- and Medium-sized Enterprise
S2BMRC	Science-to-Business Marketing Research Centre
TT	Technology Transfer
TTO	TTO
UB	University-Business
UBC	University-Business Cooperation
UPB	University Professional working with Business

Title: **The State of European UBC, a Practitioner's Perspective - 11 Expert interviews on the topic of HEI-Business Cooperation.**

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State of European UBC, a Practitioners Perspective

11 expert-interviews on the topic of UBC

Introduction

A series of 11 qualitative interviews were undertaken within work-package 2 (WP2) of the *Study on the cooperation between Higher Education Institutions and public and private organisations in Europe* commissioned by the DG Education & Culture, European Commission.

Those interviewed included:

1. *Secretary General* of a leading representative organisation for European technology transfer,
2. *Secretary General* of a leading representative organisation for European innovation coming from research,
3. *Senior Programme Manager* from a European organisation representing HEIs,
4. *Knowledge Transfer Partnerships Manager* from one the world's leading HEIs,
5. *Head of the Office for Innovation* from a leading Danish HEI,
6. *Director of the Innovation and Technology Transfer Centre* from a leading Irish HEI,
7. *Director of an Innovation Centre* in the United Kingdom,
8. *Director of a Technology Transfer Office (TTO)* in Spain,
9. *Director of Technology and Research Services* at a leading HEI in the United Kingdom,
10. *Swiss Coordinator* for a European personnel search portal,
11. *Scientific Director* of a major conference series from Finland.

At the request of the participants, the respondents have been kept anonymous.

Aims

The primary aim of the expert interviews included:

1. To obtain information specifically in respect to the following topics:
    i. Contemporary trends in UBC,
    ii. The role of framework conditions, strategies, structures and other operational activities on UBC,
    iii. Types and quantity of UBC,
    iv. Role of stakeholders in UBC,
    v. Development relationship of UBC,
    vi. The role of identifying good practice (transferability),
    vii. Main barriers in UBC,
    viii. Main drivers of UBC.
2. To inform WP3 and the creation of a quantitative survey,
3. To gather hypothesis about what the survey data (from WP3) might show in respect to UBC in Europe.

Main interview findings

Trends in UBC

Despite a reduction in contracts being experienced by one of the respondents at a HEI in the United Kingdom, businesses seemed more willing to talk to many HEIs and seek options in supplying their researcher needs. A theme running through the interviews is that businesses have become more open to sharing issues with HEIs and that businesses have been trying to influence education to ensure that they get the right human resources with the right skills and knowledge. Some of the interviewees' noted that the focus of the cooperation has moved away slightly from cooperation that contributes to financial results (e.g. licensing, patent income etc.), to less tangible forms of UBC. A good example of this development is the increasing trend of UBC in curriculum development whereby the curriculum is being influenced by business (e.g. business representatives sit more often on boards).

Finally, the knowledge of UBC within the HEIs has also grown over the recent 10 years as has the amount of finance, both from the HEI and from the Government, dedicated to UBC especially in respect to SMEs. Some HEIs were even focussing more greatly on how they can develop partnerships with smaller businesses, owing to the amount of small businesses that exist; however, it was noted that relationships with SMEs needed to be handled differently to collaborations with large organisations.

Types and quantity of cooperation

A majority of the experts interviewed observed an increase in the extent of HEIs cooperating with business. An increase in the different types of cooperation was also experienced with a greater amount of business-lead UBC research projects being observed. Especially of note was the nature of the cooperation that was occurring, with a two-sided longer-term relationship, a form of partnership, becoming more prevalent.

Collaboration in R&D was thought to be the most prevalent form of UBC with businesses often seeing this as a way of enlisting new employees. Commercialisation of research was seen as an activity that still seems to occur on a more sporadic basis rather than being within an organised system or programme. Whilst Entrepreneurship was an activity that was 'extra-curricular', with few HEIs actually having an organised programme for creating new business but rather offering courses on the topic of entrepreneurship. The interviews also showed that LLL and personnel mobility (particularly academic and professional mobility), whilst growing in prevalence, are not generally well understood types of UBC.

Development of relationships in UBC

Within the topic of 'Development of relationships in UBC', it was suggested by interviewees that relationships often grow through different stages of development, commencing with one project and , assuming success, expanding into greater cooperation. However, it was stated that relationships could also start at different levels and did not always start with one project, but rather could start at any given level of relationship. It was further remarked that despite the efforts at top level to coerce relationships, the relationships between HEI and business often commences from more personal interaction involving a lead-researcher and someone form business around mutually beneficial topics of interest. Relating to this, it was observed that when the contact comes through the researcher, the relationship is already stronger as opposed to being introduced through the HEI. All interviewees agreed that relationships were the heart of cooperation and were often at different levels of development, which requires different strategies for management.

Drivers and barriers of UBC

Interviewees often stated that cooperation is built on relationships and trust, and one-on-one relationship building is a key to successful UBC. Even though there are several main drivers of UBC, the generation of third-party money seems to be the key driver for research / commercialisation oriented cooperation, especially for HEIs.

Unsurprisingly then, a lack of finance was stated as a key barrier for UBC, amongst many other commonly-cited barriers. A further barrier named was the difference between the nature of the HEI and business with HEI seeking new knowledge and discoveries and business having a more commercial outlook. Finally, a further primary barrier nominated was the time it took to set up cooperation agreements or to achieve the commercialisation of research results.

Outcomes, measurements and stakeholders in UBC

Throughout the interviews, the interviewees stated that the government is a very important influence of the stimulation of UBC, and that the best way for governments to stimulate UBC is through funding. Good practise case studies also play an important role in stimulating UBC and can be good guidelines for HEIs. However, as good practise case studies are often specifically focussed on regions, they need adaptation and fine-tuning to other regions and contexts.

It terms of measuring UBC, multiple interviewees specified that there need to be a greater focus on creating ways of measuring UBC in order to provide a focus for it. This also relates to the recognition by the various stakeholders of the importance of UBC to economic development.

Specific theme-related findings

A summary of findings can be found below relating to specific themes in UBC.

Contemporary trends in UBC

Four of the interviewees have stated that there is an increase in HEIs cooperating with business. *Respondent 4*, the Head of the Secretariat at a research and teaching institution in Denmark indicated that both HEI and business increasingly understand that a two-sided relationship, in which both parties benefit, is preferred. The increasing preference was for a longer-term relationship, a form of partnership.

Following this, primary trends identified included:

- Public-private partnerships increase, especially in the northern European countries,
- Increase in industry lead UBC research projects,
- HEIs have become more knowledgeable about UBC in recent years.

However, *Respondent 8*, Knowledge Transfer Partnerships Manager at one of the leading HEIs in the United Kingdom, stated that the number of contracts with industry has reduced (perhaps because of economic reasons). Nevertheless businesses are more willing to talk to many HEIs and seek options in supplying their researcher needs.

Respondent 2, from a leading TTO in Europe, perceived an increase of HEIs working with business to develop their curricula, though *Respondent 5* stated that this is not a central area of interest for business. This is a trend in UBC which *Respondent 10*, Research Manager at the Innovation Centre of a leading university of applied sciences focussing on innovation, environment and design in Finland, perceived as well. The respondent stated that there was an increase of influence of business representatives who sit on HEIs' boards.

The respondent also noted that there was a trend in Finland of HEIs focussed on how they can develop partnerships with smaller businesses, due to the high amount of existing small business, but this needs to be managed differently to working with large organisations. From the governmental side, it was noted by *Respondent 7*, Secretary General at a leading European knowledge transfer association, that there are more schemes trying to facilitate UBC, especially with SMEs, for example voucher schemes (i.e. funded by regional agencies).

Lastly, it was stated that especially in the northern European countries, there was a difference in the attitude to the type of UBC entered into when comparing traditional universities and universities of applied sciences.

Types and quantity of cooperation

Interviewees named multiple types of UBC, each one with a different prevalence and development.

Respondent 1 said that in her experience businesses were more open to sharing issues with HEIs (problem solving) and that the business is trying to influence education (through placements and projects) in their activities with HEIs.

Respondent 5 stated that Collaboration in R&D was perceived as a major UBC activity with businesses often seeing this as a way of recruiting new staff. Further, commercialisation of research is

an activity that still seems to occur ad hoc as opposed to being within an organised system or programme. Lastly, Entrepreneurship was an activity that was 'extra-curricular' with few HEIs actually having an organised programme for creating new business but rather they offer courses on the topic of entrepreneurship.

Respondent 10 noted an increase in variations of personnel mobility being observed (e.g. PhD students doing their PhD with business). Despite this, the respondent believed that the full potential of mobility is still a long way from being realised. Regarding personnel mobility, it was observed that this tended to occur when there was a longer-term objective (e.g. building a research facility / capability) and occurred mostly in the form of professors going into business, though sometimes a business employee undertook a PhD. This activity also tended to occur primarily in larger organisations. Further, according to *Respondent 7*, internships could be a good way to start cooperation between HEI and business.

Respondent 5 commented that LLL was the least common UBC activities and businesses still had little involvement and little knowledge of the topic, though there seems to be more and more HEIs involved in this activity. *Respondent 9* commented that there did not seem to be many initiatives addressing LLL, although it is a reality of today's societal needs and thus continual learning has become essential.

Three of the interviewees clearly saw an increase in the range of UBC types. One of these interviewees, *Respondent 6*, Director at a leading innovation and technology transfer centre in the United Kingdom, commented that HEIs perceive an increase of major collaborative research projects such as Centres for Science, Engineering and Technology and Strategic Research Clusters (initially aimed at attracting high quality foreign direct investment and increasing number of PhDs).

A summary of the different types of cooperation types as indicated by the respondents can be listed as:

- Internships – They can by a good way to start cooperation between HEI and business a quick way to initiate cooperation, perhaps requires focus to follow up and expand the relationship.
- Businesses-influenced projects - e.g. funding PhD positions, providing topics for undergraduates to work on or contractual research (the largest area) where business defines the research project,
- Blue-sky research projects (rather than contracts),
- Secondment of researchers/professionals - External parties coming into the HEI only for brief periods and researchers spending a short period in a business,
- Exchange of knowledge - e.g. co-writing of papers, seminars for business held by HEI researchers, invited presentation or presentation from business,
- Scientific advisors on industry boards,
- Long-term grant application,
- Professor endowments to build up knowledge in particular industries - Not only 'influencing' the research direction/topics but also influencing the education of potential employees, which leads to employment of researchers and students,
- Spin-out firms – They create employment and have affiliations with HEI, often sub-contracting research to the HEI,
- Mobility - It is usually a 'forced' mobility rather than a free movement of people and it does not happen too intensively. No real fluid mobility where HEI and business equally share employment responsibilities,
- Executive education and LLL - In order to update knowledge of employees within business (e.g. through workshop participation, conferences, and degrees), however business is looking for shorter-term training and organisations don't tend to think more long term.

Development of relationships in UBC

Respondent 8 remarked that UBC commence in many different ways (e.g. existing relationships, introductions and conferences). This statement is shared by *Respondent 3*, Director of an international marketing organisation, who, out of the respondents' own experience, stated that despite efforts at top level to coerce relationships, the researcher always had to find their own relationship in a more relaxed setting. In addition, the statement of *Respondent 8* is reinforced by *Respondent 1*, who believed that the relationship between HEI and business often originates from a lead academic and a business manager who click.

Respondent 8 also commented that in their experience at one of the most leading HEIs in the United Kingdom, businesses start with one collaboration agreement and, when satisfied, they often come back to expand into a 'framework agreement' (IP, confidentiality, publication rights, liability). Similarly, *Respondent 9* stated that making common projects was the best way of creating a longer-term relationship between HEI and business, most commonly starting with pilot projects. While smaller organisations tend to do smaller and single projects with HEIs, in larger organisations one satisfying project with an HEI often involves more future projects (outsourcing their research).

It was remarked by *Respondent 4* that relationships often start extremely optimistically, perhaps unrealistically, trying to develop new breakthrough products and services. Assuming the relationship survives, this then evolves into new interactions and activities that are more realistic. The relationship itself starts in many different ways but often through some sort of facilitated interaction, networking events or visits to business. This interaction creates individual relationships that form the backbone of the relationship from which activities are created and knowledge exchanged.

In the experience of *Respondent 1*, it is the lead academic who really influences the outcome. The role of the lead academic should not be understated, as they often can become an example for other academics should the relationship deliver successful outcomes. The relationship can develop into a multi-actor, multi-level relationship, however to achieve this TTO staff need flexibility in potential outcomes because financial targets can focus on the wrong aspects.

All interviewees agreed that relationships were at different levels of development and required different strategies for management including moving the relationship to a higher level or reducing the relationship. It was generally agreed that a tool or model for managing these relationships would be useful to capture the escalating nature of the relationship. The Stairway model from Münster University of Applied Sciences (MUAS) below was mentioned by two respondents as a possible structure for such management.

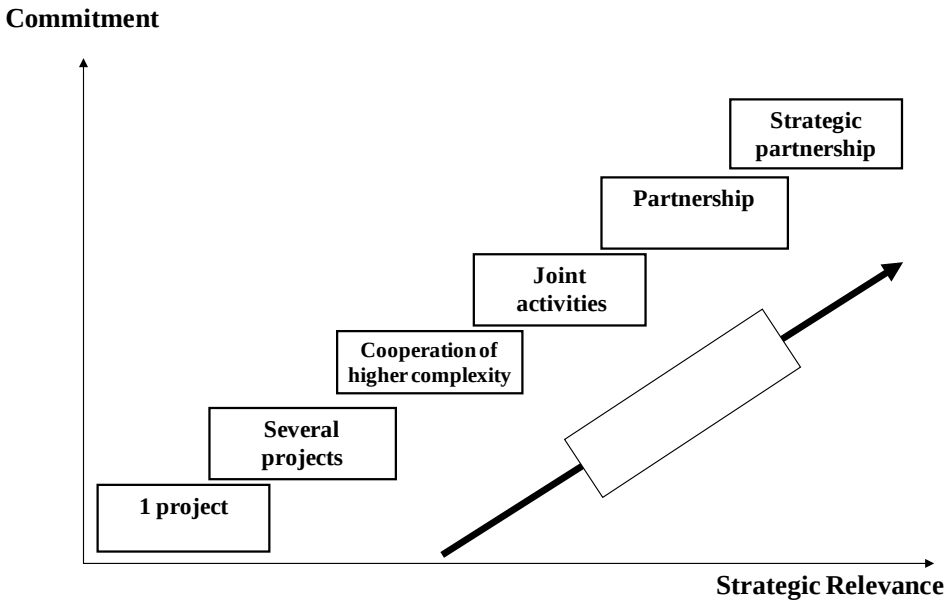

Diagram: The Stairway Model to Strategic Partnership model
Source: Baaken (2007b)

Main drivers of UBC

Respondent 6 stated that UBC is built on personal relationships and trust, and thus one-on-one relationship building is a key to successful UBC. *Respondent 8* stated that success attracts success (businesses, students, researchers), and it encourages researchers through the positive example. As stated by *Respondent 10*, the key driver in UBC for businesses is knowledge (e.g. adoption of new knowledge).

Respondent 5 stated that board commitment to UBC was considered essential to its success. Those HEIs that imbedded UBC into their HEI mission were more likely to get better results. Additionally, having a business cooperation partner that understood their own needs and had realistic expectations of the outcome of the cooperation assisted in creating successful UBC. *Respondent 5* further commented that aspects such as incentives, recognition, hours off lecturing, the provision of special infrastructure and facilities as well as positive image of UBC with peers and heads of department were also seen as crucial drivers.

Even though multiple drivers were identified for UBC (e.g. reputation, benefits of students, knowledge), there was a shared opinion that third-party money is a key driver in research and commercialisation-oriented UBC, particularly for HEIs. *Respondent 7* stated that money allows HEIs to do research that is more business-oriented. *Respondent 7* also stated that finance helps to encourage researchers to want to work with SMEs, where reputation is not such a benefit. Therefore, in the case that there would be no finance, *Respondent 7* said that academics would be primarily focussed on working with larger firms owing to the reputation this brings.

It was the opinion of *Respondent 8* that UBC occurs best at a regional level, where personal relationships were possible, especially where face-to-face meetings. The respondent also stated that HEIs can influence the willingness of the researcher to work with industry; however peers are extremely important as is funding. Further, *Respondent 8* added that if there was UBC to occur, it was important that there is interest and perceived benefit from the researcher. The respondent's institution had created successful UBC by focusing on the younger academic who is more open to working with industry.

Other drivers stated by *Respondent 2* included having the right environment (TTO having access to researchers) as well as creating a path to tenure, through commercialisation (e.g. US trend requires professor candidates to have had experience with industry).

Further the respondents named the following drivers in addition to the above:

- Financial (funding): regional, business, HEI, national
- Regional focus (industrial): HEI as an economic development actor
- HEI mission/direction: directives from management are a fundamental basis for UBC
- HEI Scouts: they go out and speak to SMEs in the region, building links
- Innovation vouchers (push approach): supplied to SMEs where they can go to a knowledge organisation in their region and buy a knowledge service

Main barriers to UBC

All the interviewees identified many barriers to UBC. Some of these barriers were identified as major barriers (e.g. the difference in nature between HEIs and businesses as well as the lack of finance) because they represent lower incentive for both parties. Another barrier named is the difference in mentality, where in European universities there is generally little pressure and threat of not earning or earning a lower salary, in business there is a commercial attitude with more time pressure and specific objetives.

Respondent 3 identified the time it takes for HEIs to react or complete tasks also as a barrier, which is supported by *Respondent 10* who said that businesses tend to want to get results as fast as possible whereas HEIs cannot always give that. Finally, *Respondent 5* commented that career-progression does not generally favour UBC in most HEIs whilst on the industry side; business often did not know what they wanted in terms of outcomes or what they expected from the HEI.

Respondent 6 clearly defined that similar barriers were present across the EU, including:

- a lack of appreciation of the HEI mission by business,
- a common industry rejection to pay for HEIs IP, since they are funded by the state,
- unrealistic expectations of UBC by most HEI managers,
- a lack of consistency in IP systems across Europe.

Respondent 8 listed the barriers as:

- the long time required by HEIs to react or complete tasks,
- the pressure on researchers to publish,
- the negative view of commercial activities by researchers,
- the long time required to commercialise research,
- the lack of ‘buy-in’ on UBC by the head of department,
- the complexity when working with big businesses due to the high amount of people,
- the self-sustainability of UBC facilitators, which makes them focus only on the best commercial projects.

Outcomes, measurements and stakeholders in respect to UBC

There was a consensus among interviewees about the fact that the real value of UBC is its economic impact through investment, development of people and experience, funding of other research and other intangibles. HEIs tend to earn commercial income through a few blockbusters; however, most commercial projects are smaller with little financial value. Therefore, the main return is to the economy generally rather than directly to the HEI.

Regarding the measurements, *Respondent 6* stated that there is a movement to economic and social-impact metrics (e.g. number of jobs, benefits to society), for technology transfer and UBC rather than strict measurements (e.g. patents, licenses, spin-outs). Whereas *Respondent 9* stated that there are very soft performance measures when it comes to creating UBC (e.g. jobs as a measure are not going to reflect this). As an example, in the United Kingdom economic impact now also involves looking in the past as well as future economic impacts. *Respondent 4* stated that whilst UBC is difficult to measure, activities are relatively easier to measure compared to the results of the activities.

Concerning the stakeholders, *Respondent 10* named many kinds of stakeholders who are involved directly and indirectly and *Respondent 2* added that there is a complex intertwining of stakeholders and their roles.

However, all interviewees saw government as a very important actor on the stimulation of UBC. According to *Respondent 1* and *Respondent 8*, governments can influence UBC primarily through funding and the existence is very important for successful UBC. The funding can be focussed on specific themes or problems existing in society with the need for industrial partners and having to consider greater society. In addition, *Respondent 9* suggested that governments should provide favourable conditions for 'bringing the two worlds together'.

Respondent 1 stated that the creation of positive framework conditions is primarily the responsibility of governments, however they are generally too short-term focused, on specific issues in UBC, and that there is lack of sustainability in their efforts. Furthermore, the respondent believes that there is a role for governments in communicating good practice and policies for the management of IP (i.e. influences behaviour and even just how to handle certain situations). *Respondent 1* also said that the media has an increasing role of presenting HEIs as a place to get access to good knowledge and that regional organisations play the role of complementing and enhancing UBC.

Further, *Respondent 2* stated that transient funding, specifically funding programmes that come and go, have significantly less influence than the influence of on-going funding, where collaboration can be planned with a longer term perspective.

Respondent 10 said that one of the reasons why UBC is so well developed in Finland is that all the associations of the labour market and employees and other stakeholders understand the importance of UBC. Additionally, *Respondent 1* commented that HEIs are now being seen much more as integral to the economic development. *Respondent 9* noted that this was perhaps the reason for there being a much greater focus from politicians on UBC and the reason for many initiatives on a regional, national and European-level. *Respondent 4* provided an example of this in their HEI, which had taken a more leading regional-development role. The respondent commented that this seems to be a task undertaken by HEIs that are more recently established and / or exist in small or remote communities.

Five of the interviewees said that good practice case studies could be a great help. *Respondent 10* said that their organisation uses a lot of good practice case studies providing substantial assistance for them (e.g. in promoting to industry and in explaining to government what HEIs precisely do). However whilst good practice case studies can be a great guideline for certain HEIs, according to *Respondent 2*, they can be very case specific and therefore difficult to transfer. Therefore a mix and match of different elements can help to bring about a successful transfer of good practice to another regional

situation. Adding to this, *Respondent 4* stated that differences in cultures, laws, power-distance and nature of HEIs made copying good practice something problematic. However, HEIs can certainly learn from each other.

The full interviews and the qualifications of those interviewed can be found in the following section.

Extended interviews

Expert interviews on the topic of UBC

Interview notes of the interview with Respondent 1

Respondent 1		Date	25.10.10
Title	Director of the technology and research services	Method	Telephone interview
Organisation	A leading international focussed public HEI in the United Kingdom	Length	One hour
		Interviewed by	Todd Davey
About the interviewee	The respondent is a director of the HEI's technology and research services. The office within the HEI develops innovative links between industry and academia through collaborative research, technology, technology licensing, business creation and the delivery of training and consultancy services.		
Contemporary trends in UBC	The respondent believes that there are greater frequency graduates (entrepreneurs into degree and post graduate courses) who go onto lead small businesses and are more open to HEIs and the benefits. Especially graduates who go into SME look more long term, and are more willing to work with HEI. Moreover, they have ambitions and professionalism.		
The role of framework conditions, strategies, structures and other operational activities on UBC	The interviewee states that the role of framework conditions is primarily the responsibility of governments, and the existence is very important for successful UBC despite the fact that government strategy can be confusing towards stimulating UBC. Moreover, the interviewee believes that business often ignore benefits potentially created by HEI unless incentives are also provided but return on investment for business depends on different factors. He thinks that UBC currently influences the teaching of students, influences what is researched, the level of networks of academics (informal from contacts and colleagues) and knowledge / intelligence (keeping your ear to the ground). In addition, the queried believes that whilst for small businesses it is too long term, big business sees more often the long term		

	benefits. Furthermore, the respondent believes that a role for governments is communicating good practice and policies for the management of IP, which influences behaviour and even the way to handle certain situations. The respondent remarks that only the supplying of tools does not work; appropriate framework conditions assist in creating the right mentality, expectations and environment.
Types and quantity of cooperation	The interviewee states that there has been a definite increase in UBC and that the recognition of use of analysis to understand their issues is provision for HEI cooperation. The respondent believes there is a better understanding of HEI capabilities, the own needs of the HEIs and the need for appropriate payment of HEIs by business. The interviewee remarks that the businesses are more open to share issues with HEIs (problem solving), and that the business is trying to influence education in their activities with HEIs through placements and projects. The types of mutually-beneficial cooperation are increasing including business visiting HEIs (clients and staff benefit) and academics speaking at business events (business initiating). The interviewee states that the mobility is more relevant in the USA and that main issues are pension arrangements and promotion, an issue that needs to be sorted out in Europe.
Role of stakeholders in UBC	The respondent indicates that governments are too short-term focused on specific issues in UBC and that there is not a sustainability of efforts. The interviewee mentions that HEIs evolve government thinking to balance its focus. Moreover, the respondent states that “entrepreneurial HEI” perspective has become more prominent which creates an interaction with society but business is a large part of this ‘society’ element. The queried believes that the TT role is supporting and leading, depending on where it is positioned in the HEI. The interviewee also states that the business has become more open to ideas and ways of working, and that they are not so short-term in their thinking (i.e. time and money constrains). The respondent also identifies that the roles of the regional organisations are to complement and enhance but unfortunately there are too many regional fragmentations in EU. The interviewee expresses that the media has an increasing role of presenting HEIs as a place to get access to good knowledge. Further improvements are that government agencies have got better at connecting, and academics can better articulate what they do, which HEIs can use to market their knowledge and technology.
Development relationship of UBC	Additionally, the respondent believes the relationship between HEI and business often commences from a lead academic and a business manager who click. The role of the lead academic

	should not be understated as they often can become an example for other academics when the relationship delivers successful outcomes. It is stated, that it is now easier than ever for business to get into HEIs and find a first point of contact. The relationship can develop into a multi-actor, multi-level relationship. However, to achieve this TTO staff need creatively and flexibility, while in the current situation financial targets are focused on the wrong aspects. The interviewee experienced that researchers do not like to be forced into cooperation and that facilitators of UBC should do more background work to understand what each party needs and expects.
The role of identifying good practice (transferability)	He indicates that "stories" can be very useful though case studies are often too regional specific. However, the interviewee believes that there can be transferability on strategies, structures and activities if these are customised to the needs of the local organisation and the regional setting.
Main drivers of UBC	The interviewee believes that the main drivers for HEIs to carry out UBC are income, reputation and benefits for students while the mains drivers for business are new products and technologies. The drivers for business have become rather more robust and diversified in their cooperation with HEIs and they often look at HEIs as places to find good employees. The interviewee believes that researchers often understand the issues facing business but spend little time focusing on them. Therefore, the trade organisation (industry organisation) is often the best place to go to understand the issues that face the industry now and will face in years to come. The queried considers that the main driver specifically for LLL is personal development. LLL is big but few look more broadly and "training" is often the first line in the budge t that is cut. The interviewee states that there is a lack of focus of "personal" development in respect to education.

Interview notes of the interview with Respondent 2

Respondent 2		Date	27.10.10
Title	Secretary General	Method	Telephone interview
Organisation	A leading TTO in Europe	Length	One hour
		Interviewed by	Todd Davey

About the interviewee	Respondent 2 is Secretary General at a leading TTO in Europe and is responsible for every day management of the association, development of new projects, relations with stakeholders and members.
Contemporary trends in UBC	The respondent thinks that there is a trend, particularly in the United Kingdom, where HEIs work ever-more closely with businesses and there is an increase in working with business in curriculum development.
The role of framework conditions, strategies, structures and other operational activities on UBC	The respondent says that the government framework conditions are the basis for activity, driven primarily by funding. A loss of budget in HEIs can be an incentive for more interaction with industry, which can offer new sources of funding. In addition, the queried thinks that transient funding has significantly less influence than the influence of on-going funding. Furthermore, the respondent thinks that HEI framework conditions are extremely important; for example, a change of the president at a HEI has shown that leadership significantly affects the HEI's focus for UBC, what can filters down to researchers and influences role of TTO.
Types and quantity of cooperation	The respondent says that Anglo-Saxon (spin offs licensing) mentality, prevalent in the USA, differs to the European approach, where joint research cooperation based on research projects and contracts is extremely important. Moreover, the respondent thinks that there are multiple variations in UBC that are affected by national and regional schemes.
Role of stakeholders in UBC	The respondent says that there is a complex intertwining of stakeholders and their roles
The role of identifying good practice (transferability)	The respondent states that good practice can be very case specific and therefore difficult to transfer. Good practice can be showcased and shared, but the difficulty is in the adaptation and fine-turning to apply in another situation. One example which has worked is the ENP programme in Linköping (a model replicated in eight other regions in Sweden), which encourages

	researchers/students to create a new business with help through mentoring. In addition, the respondent said that often a mix and match of different elements can help to bring about a successful transfer of good practice to another regional situation. Furthermore, the respondent thinks that showcasing good practice *in situ* can help potential adopters to take back messages to their local area to adapt and implement.
Driver success factor	The respondent indicates that there need to be frequent contact between researchers and TTO personnel. Moreover, the respondent thinks that a driver for success is having a programme in place (e.g. breakfast meetings) to support UBC. The respondent also said that the promotion of success in commercialisation is important and that the topic should be continuously on the table. Other factors the respondent considers important are having the right environment, where TTOs have access to researchers and can creating a path to tenure though commercialisation (i.e. US trend requires professor candidates to have had experience with industry). The respondent also appoints peer reference as another driver for success; however this requires a long term approach.
Main drivers of UBC	The respondent thinks that the main drivers for UBC are the existence of funding from all actors: government, business, HEI, etc. and a regional focus, in which the HEI is considered as an economic development actor. Additionally, the interviewee states that HEIs the management is a fundamental basis for UBC, as it establish the HEI mission and direction. Specifically, he mentions the HEI Scouts, who are people that go out and speak to SMEs in the region, building links and, as an example of a push approach, the innovation vouchers that are supplied to SMEs, which can go to a knowledge organisation in their region and buy a knowledge service.

Interview notes of the interview with Respondent 3

Respondent 3		Date	27.10.10
Title	Director	Method	Telephone interview
Organisation	An international marketing organisation	Length	One hour
		Interviewed by	Todd Davey

About the interviewee	Respondent 3 joined the international marketing organisation to manage a flagship of £1.2 million. This has entailed setting up a substantial selection, training and assessment process within bioscience business, education, investment and public sector organisations. This included securing mentors, creating training programmes and events and mentoring and supporting the nascent new entrepreneurs as they emerged into the commercial world.
The role of framework conditions, strategies, structures and other operational activities on UBC	The respondent considers framework conditions, especially through public sector funding, as vitally important to UBC, especially where they facilitate close working relationships between HEI and business.
Types and quantity of cooperation	The respondent sees that following an initial cooperation project, UBC develops taking different forms such as: co-writing of papers, a period of 1-2 weeks that the researcher spend in a commercial lab, long-term grant application, invited presentations for industry people in HEIs and vice versa, etc. The interviewee highlights that the UBC benefits include an increase in confidence in the work of the researcher.
Development relationship of UBC	In the experience of the respondent, a UB relationship firstly starts on an individual basis. Despite efforts at top level to coerce relationships, the researcher always had to find their own relationship in a more relaxed setting. It was felt that relationships were all unique following one of three paths: Either ceasing working after initial cooperation, continuing working together after cooperation (neither increase of decrease) or continuing collaborating and expanding working together after initial cooperation.
The role of identifying good practice (transferability)	The respondent believes that at a programme level, transfer to other regions is possible. As an example of this transferability, a programme in the office of the respondent is responsible for, is

	in the process of investigating the possibility of transferring the scheme to Belgium.
Barriers in UBC	Some of the barriers named by the respondent include those related to time differences between HEIs and businesses, with HEIs requiring longer time to react or complete tasks, or the amount of time it takes to commercialise knowledge Other barriers named are related to researchers attitudes towards commercial activities, which were seen as 'dirty' and the pressure on researchers to publish. Other problems are related to not getting the 'buy-in' on UBC by the head of department or the fact that facilitators of UBC have to be self-sustaining, which makes them focus only on the best commercial projects. In terms of the size of the HEI, smaller HEIs are sometimes easier to work with than bigger ones, as business people can get lost with the high amount of people.
Main drivers of UBC	It was the opinion of the respondent that UBC occurs best at a regional level where personal relationships were possible, especially face-to-face interactions.

Interview notes of the interview with Respondent 4

Respondent 4		Date	28.10.10
Title	Head of the secretariat at the Faculties of Engineering, Science and Medicine	Method	Telephone interview
Organisation	A young and well-established research and teaching institution in Denmark	Length	One hour
		Interviewed by	Todd Davey

About the interviewee	Respondent 4 is Head of the Secretariat at the Faculties of Engineering, Science and Medicine and intermediary office (i.e. between researchers, students and business) at a young and well-established research and teaching institution in Denmark. The respondent has participated in a number of institutional initiatives for the purpose of improving the possibilities for transferring and utilising the knowledge and technology of the HEI in relation to society at large.
Trends	The respondent notes an increase in UBC with more programmes being offered by government ministries and HEIs.
The role of framework conditions, strategies, structures and other operational activities on UBC	The respondent states that there are framework conditions addressing the three missions of the HEI: (1) research, (2) education and (3) knowledge transfer and that UBC bridged across all three areas. Knowledge is increasingly being recognised, especially by business, as being the reason for interacting with HEI.
Types and quantity of cooperation	According to the interviewee's own experience, the institution in Denmark organises their interaction around industry groups (e.g. the ICT industry group which spread itself across 12 departments within the HEI). This then creates a powerful lobby group or voice for industry changes.
Development relationship of UBC	It is remarked by the respondent that relationships often start extremely optimistically, perhaps unrealistically, trying to develop new breakthrough products and services. Assuming the relationship survives, this then evolves into new interactions and activities that are more realistic. The relationship itself starts in many different ways but often through some sort of facilitated interaction, networking events or business visit. This interaction creates individual

	relationships which form the backbone of the relationship from which activities are created and knowledge exchanged.
Main drivers of UBC	The respondent considers that funding helps to focus and align the interests of HEI, business and government, which was seen as an essential driver in UBC. It is seen as important that HEIs converted their UBC intentions more formally into strategies. A further driver is having the time to dedicate to build a relationship. A regional approach to UBC is seen by the respondent as crucial to its success, with both external and internal (within the HEI) "matchmakers" dedicated to the task.
Barriers in UBC	Some of the barriers named included generally the lack of time of business for cooperation activities and in addition for SMEs particularly, the lack of knowledge, understanding and absorptive capacity to benefit from UBC. Contrary, large organisations can often dialogue with academics and HEIs and have the resources to benefit more favourably from UBC. Interests within the HEI were also seen as a barrier whilst on the issue of funding, national funding schemes often do not address UBC activities.
Measuring HEI-Business cooperation	The respondent specifies that UBC in general is difficult to measure. However, activities are relatively easier to measure compared to the results of those activities.
Role of stakeholders in UBC	The respondent answers that his HEI had taken a leading regional-development role. This seems to be a task undertaken by HEIs that are more recently established and / or exist in small or remote communities.
The role of identifying good practice (transferability)	The interviewee indicates that differences in cultures, laws, power-distance and nature of HEIs made it problematic to copy good practice; however HEIs can certainly learn from each other.

Interview notes of the interview with Respondent 5

Respondent 5		Date	29.10.10
Title	Senior Programme Manager	Method	Telephone interview
Organisation	A leading association for HEIs within Europe	Length	One hour
		Interviewed by	Todd Davey

The interviewee requested that the interview notes remain confidential.

Interview notes of the interview with Respondent 6

Respondent 6		Date	03.11.10
Title	Director	Method	Telephone interview
Organisation	A leading Innovation and Technology Transfer Centre in the United Kingdom	Length	One hour and a half
		Interviewed by	Todd Davey

About the interviewee	Respondent 6 is Director of a leading Innovation and Technology Transfer Centre in the United Kingdom and is also Chair Elect of a leading European knowledge transfer association.
Trends	The respondent indicated that public - private partnerships are currently increasing, especially there is an increase in industry lead projects. At the same time, HEIs have become more knowledgeable about UBC issues. It is stated that although public funding is being provided by HEIs, it needs to be sustained.
The role of framework conditions, strategies, structures and other operational activities on UBC	The respondent explains that according to his experience, more and more UBC issues are being solved at a national level in Ireland, with policy initiatives such as the Innovation Task Force and the AD Little of current supports for exploitation of HEI IP. In order to implement the recommendations, three committees have been established, including a policy committee and an implementation committee. Codes of practice for management of HEI have also been drawn up by the EU and some member states including Ireland; while others such as Denmark have introduced legislations. The respondent also highlights the shift of the importance of HEIs in the economic development of a region, with HEIs now being seen much more as integral to the economic development of a region (e.g. 2020 Strategy, Innovation Union, etc.). It is also described how UBC is gradually moving more towards economic and social-impact metrics (e.g. number of jobs, benefits to society, etc.) for technology transfer and UBC rather than strict measurements of patents, licenses, spin-outs, etc. In the United Kingdom, economic impact now also involves looking in the past as well as future economic impacts. The interviewee underlines the role of government in filling the early stage investment gap for start-up businesses, when investment (esp. VC funding) is only available for more

	established businesses where the risk is lower.
Types and quantity of cooperation	The respondent states that there is an increase of major collaborative research projects such as Centres for Science, Engineering and Technology and Strategic Research Clusters, which initially aimed at attracting high quality FDI and increasing number of PhDs. However, recently the focus has shifted to licensing and start-ups. The interviewee perceives that innovation partnerships jointly funded by industry and state funds are becoming more common. Innovation vouchers (small) to facilitate solution of problems by HEI. Spin-ins (survival rate is ok, but investment attracted lower than spin-off) Spinouts find it easier to create the private public cooperation because of their relationship with HEI researchers.
Development relationship of UBC	The respondent states that UBC is mainly built on relationships and mutual trust and perceives that one-on-one relationship building is key to successful UBC.
Barriers in UBC	In term of barriers, the interviewee mentions that many of the barriers that exist are similar across the EU. One of the main one is related to the lack of consistency in IP systems across Europe, which really hinders UBC. However, it is revealed that a great deal of initiatives in the EU is being created to increase transparency in IP contract negotiations (e.g. standard contracts, Lambert agreement in the UK, etc.) From the business side, the respondent sees a lack of appreciation of the HEI mission by business and a belief within industry that they should not have to pay for HEI IP since HEIs are funded by the State. Additionally, from the management perspective, HEI management usually have unrealistic expectations regarding UBC.
Main drivers of UBC	Within the main drivers of UBC, the respondent indicates the development of an innovation culture within the HEI and highlights the importance of the open innovation paradigm. Another key driver underlined is the adequate management of expectations for both business and HEIs.
Measuring UBC	The queried states that HEIs earn commercial income through a few blockbusters. However, most commercial projects are smaller with little monetary value. Additionally it was explained that the real value of UBC is its economic impact though reinvestment, development of people and experience, funding of other research. Therefore, the main return is to the economy rather than directly to the HEI.

Interview notes of the interview with Respondent 7

Respondent 7		Date	04.11.10
Title	Secretary General	Method	Telephone interview
Organisation	A leading European knowledge transfer association.	Length	One hour
		Interviewed by	Todd Davey
About the interviewee	Respondent 7 is Secretary General of a leading European knowledge transfer association. The association is there to boost the knowledge transfer from European HEIs and public research centres by a better valorisation of their research results, through more patents and license agreements and more start-up creations.		
Trends	The respondent explains that commercialisation of R&D results is the major focus of the members of the association, trying to find customers who are interested in R&D results for HEI research. Trends were specified according to each of the main actors. From the business side, a higher demand is perceived for contract research, especially from SMEs, rather than fundamental research. Large organisations are already capable, in terms of research, or organised to work with HEI and research funding. The problem is more in the area of SMEs, where they have less finance as well less time to commit. It is perceived that cheap access to R&D is the key. From the HEI side, a more commercial thinking within the HEI is seen as well as having 'open-days' promoting HEI capabilities. Finally, from the governmental side, more schemes are seen trying to facilitate UBC, especially for SMEs, for example voucher schemes (i.e. funded by regional agencies). Vouchers are quick to apply for (business centric), faster than research proposals and get the SMEs in the door of the HEI.		

The role of framework conditions, strategies, structures and other operational activities on UBC	The queried highlights the fact that the EC spends a lot of money on research without a close attention to the research results. It is indicated that valorisation has not been a focus (through a dedicated budget) of recent EC frameworks. It is thought that FP5 to 7 talk about implementation plan for the results of the project. However, there has never really been any penalty for not commercializing the project results. It is suggested that a dedicated budget for commercialisation within research funding with EC-funded project could be dedicated since the R&D budget of the EC is 53.6€ Billion (over 7 years, 2007-13) but the commercialisation budget is not even 1% of this. Thus special funding could be dedicated to 'proof-of concept'.
Types and quantity of cooperation	The interviewee considers that the largest area is contractual research together with employment of researchers and students, which occurs quite a lot. The importance of spin-out firms is highlighted, since they create employment and have affiliations with HEI, often sub-contracting research to the HEI. According to the respondent, internships can be a good way to start cooperation between HEI and business, and a quick way to initiate cooperation. But they might require focus to follow up and expand the relationship. Generally, mobility is not something that happens too intensively. Usually there is a 'forced' mobility rather than a free movement of people. There is no real fluid mobility where HEI and business equally share employment responsibilities Finally, lifelong learning is explained, referring to always needing to upgrade our knowledge (workshop participation, conferences, and degrees). However, businesses are perceived to look for shorter-term training and organisations do not tend to think in this way.
Development relationship of UBC	The queried is against the common belief about rectors being generally resistant to UBC, since it is a matter of funds. Thus, with reducing budgets and more limited resources, finance can really help to provide HEIs with a focus and support the HEI to actually carry out UBC.
Barriers in UBC	The respondent names the lack of finance as a major barrier to UBC and the result is that when there is lack of financing, there is less incentive for both parties. Another barrier considered important is the difference in mentalities between HEIs or public work-life, where generally there is little pressure and any threat of not earning a salary and business where it is "cut-throat".
Main drivers of UBC	The interviewee believes that UBC is driven by finance, mostly coming from governmental funds at different levels. It is thought that business needs finance in order to commence UBC,

especially SMEs and that high taxes rob business of their ability to start and expand their business.

Additionally, even on the HEI side, their UBC is also driven by finance as it allows them to do their research. But without finance, HEIs would be primarily focussed on working with larger firms owing to the reputation this brings. Thus finance helps to encourage researchers to want to work with SMEs where reputation is not such a benefit.

Interview notes of the interview with Respondent 8

Respondent 8		Date	04.11.10
Title	Knowledge transfer partnerships Manager	Method	Telephone interview
Organisation	One of the most leading HEIs in the United Kingdom	Length	45 minutes
		Interviewed by	Todd Davey

About the interviewee	Respondent 8 is knowledge transfer partnerships Manager at one of the most leading HEIs in the United Kingdom. Knowledge transfer partnerships are one of the longest standing schemes available to academics for industry collaboration. This scheme sponsors partnerships between academics and businesses to solve problems identified by the partner organisation, typically for two years. A knowledge transfer partnership associate is recruited to work with the organisation and is jointly supervised. This scheme is funded by the Technology Strategy Board and is supported by most United Kingdom Research Councils.
Trends	The respondent identifies that the number of contracts with industry has been reduced (perhaps economic reasons) and a higher strength in negotiation for HEIs in the United Kingdom due to a recent science budget announcement with less than expected reduction in research funding. It is also perceived that the HEI is signing a lot more confidentiality agreements. Academics have perhaps been forced to search for other sources through the expectation of reduced funding for research. This means that often cooperation is a follow-on from these agreements; in other words, confidentiality agreements are a sign-post for future cooperation. The last trend mentioned is that businesses are more willing to talk to many different HEIs and seek options in supplying their researcher needs.
The role of framework conditions, strategies, structures and other operational activities on UBC	The queried explains that governments can influence UBC primarily through funding, as it focuses research in certain areas as well as “forcing” cooperation. Governments can focus on specific themes or problems existing in society and the need for industrial partners and having to consider greater society. However, there are differences among the different areas of knowledge with arts and humanities perhaps not so engaging with industry.

	The respondent considers that cooperation relies on whether the academics themselves want to work with industry and as such, activities to foster cooperation need to also be focussed on these areas. However, the HEI can influence the willingness of the researcher to work with industry. Nonetheless, there are other factors that affect this cooperation such as peers, funding or the own interest of the researcher in the project. The respondent believes that the success of the UBC mechanisms depends on the nature of the organisation (e.g. traditional universities are usually more focused on fundamental research). Finally, he suggested focusing activities on the younger academics, who are more open to working with industry.
Types and quantity of cooperation	According to the interviewee, the most common types of UBC are the blue-sky research projects rather than contracts. In terms of people mobility, the respondent underlines the importance of secondment of researchers (external parties who sometimes come into the HEI but only for brief periods), the seminars for business held by HEI researchers and the presentations from business in HEIs, although these are more useful in some industries than in others. The queried comments that business can influence research topics and directions when they have close contacts within the HEI; for example, funding PhD positions in which business defines the research project or providing topics for undergraduates to work on. Additionally, business can also influence the education of potential employees, for example through executive education. Finally, it is stated that not so common but it would be advisable to have scientific advisors on industry boards, in order to build up knowledge in particular industries.
Development relationship of UBC	The respondent says that cooperation starts from many different routes, (e.g. existing relationships, introductions and conferences) but when the contact comes to the HEI through the researcher then the relationship is already more strong as opposed to being introduced through the HEI management. Businesses start with one collaboration agreement and whether satisfied, they often come back to the HEI in order to expand it into a “framework agreement” (IP, confidentiality, publication rights, liability, etc.). However, the interviewee perceives that there are some differences in business behaviours towards UBC, because while smaller organisations tend to do smaller / single projects, in larger organisations one project becomes more projects assuming there is satisfaction as a way of outsourcing their research, but not quite contract research, which is more experimental.

Main drivers of UBC	According to the respondent, the main driver is the successful practice of UBC itself in the HEI, as success attracts success (i.e. collaborative businesses, entrepreneurial students, proactive researchers, etc.) and it encourages all the actors through the positive example.

Interview notes of the interview with Respondent 9

Respondent 9		Date	10.11.10
Title	Secretary General	Method	Telephone interview
Organisation	A leading office for European research, business and innovation	Length	45 minutes
		Interviewed by	Todd Davey

About the interviewee	Respondent 9 is Secretary General at a leading office for European research, business and innovation, offering following personalised support services: Technology Database - Database with current innovation opportunities Technology e-Alert - Mailing of new innovation opportunities matching your profile of interest Technology Promotion - Promotion of your own technology profile Brokerage Events - Innovation events with face to face meetings between selected partners
Contemporary trends in UBC	The respondent comments that innovation and how to transfer knowledge to the economy is a very common topic within governments, business and the academic world. There is a much greater focus from politicians for UBC and there are many initiatives on a regional, national and EU-level fitting in the EU programmes.
The role of framework conditions, strategies, structures and other operational activities on UBC	The queried suggests that governments should provide favourable conditions for "bringing the two worlds together" as this role will not be funded by the private sector. Among others, trouble shooting, translating, facilitating resources for UBC are required. In terms of measurements, there are very soft performance measures when it comes to creating UBC and using jobs as a measurement tool does not to reflect this. The real difficulty for everyone is how to measure the current success of the UBC framework funding. There are some networks, such as Enterprise Europe Network, which is funded by the EU and has quite useful key performance indicators. However, they do not necessarily reflect the value offered by the network.

Types and quantity of cooperation	The interviewee states that making common projects is the best way of creating a longer-term relationship (starting with pilot projects) between HEI and business. Humans don't like change, so it can be difficult to bring together new groups, especially if there are very different. There needs to be a subtle way of introducing the academic with the business person, for which time and space are required. Conferences and workshops may help in this process. The queried also underlines bachelor thesis addressing business problems as a common type of UBC and states that perhaps those writing the thesis then get employed by the partner organisation. These PhD students doing their PhD with business, as well as business coming to the HEI to do lectures or researchers and business people working in the business / HEI on a research project are examples of mobility. However, the potential of mobility has not yet been fully realised. Concerning LLL, the respondent comments that we live in a fast-changing lifestyle and LLL is a reality of today's society and its needs. As such, continual learning is essential and people need to be taught to learn. However, there doesn't seem to be many initiatives addressing this.
Barriers to UBC	The respondent identifies that the common misunderstandings between the two groups can be one of the main barriers. Especially, SMEs can be a little intimidated by going to academics with often a misunderstanding at the centre of gap between the groups. Additionally, it is thought that the lack of awareness of business about which knowledge exists and where is also an important barrier. However, even if businesses are aware of the knowledge possibilities, it is difficult to identify those academics and businesses that are suitable for UBC.
Main drivers of UBC	The queried recognises confidence and trust in the process and the potential partner in both directions as the main driver od UBC. The relationship can include the use of facilitators and "translators" though it relies on people; it is a people's business. A necessary although not sufficient driver for UBC is the possibility of accessing enough funding. Other drivers identified by the respondent at international scale are the pressure of a changing world with the rise of knowledge societies in industrialised and developing countries rapidly catching up. For example China that now is starting to create new knowledge. However, it is also possible for UBC actors to have an altruistic motivation to test results and develop something useful for the world.

Interview notes of the interview with Respondent 10

Respondent 10		Date	12.11.10
Title	Research Manager	Method	Telephone interview
Organisation	An innovation centre of a leading University of Applied Sciences focussing on innovation, environment and design within Finland	Length	One and a half hour
		Interviewed by	Anne Tijsma
About the interviewee	Respondent 10 works as a research manager at the innovation centre of a university of applied sciences in Finland. The respondents' tasks include preparing research and development activities such as conferences, projects, and R&D cooperation. The respondents own research interests focus on higher education system, especially the role and tasks of universities of applied sciences in higher education system, and possibilities/effects of promoting higher education- and innovation-based entrepreneurship.		
Contemporary trends in UBC	The respondent says that the trend in Finland is that all HEIs, traditional universities as well as universities of applied sciences, tend to seek long term relationships with businesses. HEIs see the need to be more in close contact with society and thus are talking to the government to stimulate third mission. However traditional universities, which are more scientific based work less with businesses in comparison to universities of applied sciences which are more practically oriented, want to combine education and ideas and tend to work very closely with community and businesses. The queries explains that it has already been discussed for years that it is important for students to have certain skills for the labour market; nevertheless HEIs tend to open-up to this idea. The trend is that curricula get more work oriented with business representatives having more influence on the curriculum development and sitting more often on boards, although it was not until the beginning of this year when businessmen started to sit on boards at the traditional universities in Finland. The respondent indicates that the third trend in Finland is that HEIs focus on how they can develop partnerships with smaller businesses, as smaller businesses are a huge part of society. One of the reasons why smaller businesses do not take part in UBC is the lack of financial resources; however, smaller businesses can take part in clusters with larger businesses or HEIs and take on UBC projects with reduced costs.		

The role of framework conditions, strategies, structures and other operational activities on UBC	The respondent says that the traditional universities are changing concerning the framework conditions, strategies, structures and operational activities. However universities of applied sciences better align their mission with UBC and use strategies to promote entrepreneurship. HEIs promote the well-being of society, but this mostly is in their own region. One example to overcome the regional focus of HEIs is three universities of applied sciences that started to cooperate with each other in order to strengthen themselves as well as the other HEIs and to be better able to cooperate with businesses outside their own region. Government is a very important influence on the stimulation of UBC and also provide a structural development improvement. The queried recognises that one of the reasons why UBC is so well developed in Finland is that all the associations of labour market and employees and other stakeholders see the importance of UBC. Industry is well aware of the importance of UBC and a reason for this is that the industry and the government want to stimulate national competitiveness. The EU plays a huge role in making the Finnish industry aware of the importance to enhance the national competitiveness of Finland.
Types and quantity of cooperation	The respondent states that there are all types of cooperation in Finland, almost everything is possible at the moment, but it is still difficult to measure the quantity of cooperation accurately.
Role of stakeholders in UBC	The queried identifies a great deal of stakeholders that are directly or indirectly involved in UBC, which range from the members of a board or steering groups, to the different actors involved in projects. In addition, stakeholders are also representatives in evaluation groups that evaluate if projects are worthwhile. Stakeholders are expressing what kind of needs they have for the future (e.g. business expresses what skills do students need to have) and this way they indirectly influence the curriculum development (e.g. an alignment in theory and practice). Generally all stakeholders groups make a picture of the future and say what they want from the HEI.
Development relationship of UBC	The respondent comments that most of the HEIs in Finland want to build up a long term relationship with businesses because one project would not be worthwhile. However, even though they see the importance of a long term relationship within the HEI the interviewee is working, they do not have them yet. This often depends on the structure of businesses, with large businesses being more open to longer relationships.
The role of identifying good practice (transferability)	The respondent indicated that HEIs are more frequently describing their case studies on their websites and sometimes in articles or in studies made by or made for the EU. The respondent believes that good practice case studies can be a great guideline for certain HEIs.

	As an example, the interviewee explains that they use a lot of good practice case studies and that it is a huge help for them (e.g. in promoting to industry and to explain to the government what HEIs precisely do).
Barriers in UBC	A respondent identifies a major barrier for UBC being the difference in nature of the two institutions, that is, the difference between HEIs and businesses. Businesses tend to want to get results as fast as possible whereas HEIs cannot always give that. Next to that HEIs are also restricted to their curriculum and so cannot always do a certain research. Another barrier the respondent identified is that people in HEIs are worried that businesses will influence the HEIs too much.
Main drivers of UBC	The queried names a key driver of UBC for HEIs, which is the generation of third-party money. Another major driver of UBC for HEIs is that education needs to be built on the needs of society and businesses play a vital role in the society. The key driver in UBC for businesses is the acquisition of new knowledge (e.g. adoption of new knowledge), which helps to develop businesses.

Interview notes of the interview with Respondent 11

Title	Director	Method	Telephone interview
Organisation	TTO in Spanish HEI	Length	One and a half hour
		Interviewed by	Arno Meerman

About the interviewee	Respondent 11 is the Director of a TTO in a HEI in the east of Spain. In this TTO they create technology-based companies from the university research; they manage IP related issues, national and international R&D programmes and research contracts with industry. They are the links of all academics for their interactions with the business world.
Contemporary trends in UBC	Respondent 11 believes that there is a trend in Alicante, due to the financial downfall of Spain's economy, that SMEs approach the HEIs more often for projects. This occurs mostly in technological areas and to a smaller degree in social areas. The interviewee also states that there is a greater focus on innovation/R&D instead of on construction and manufacturing that increases the level and intensity of UBC. A possible cause of this is the financial crisis.
The role of framework conditions, strategies, structures and other operational activities on UBC	In the recent years, the Spanish government has had a large focus on R&D and patenting. These activities are being supported on a regional as well as a national level. Within the respondent's HEI, entrepreneurship in the form of spin-offs is being promoted in several ways, such as rewards for business plans and ideas and offering support in the development of these plans and ideas. The creators of these ideas receive a part of the ownership in the spin off. The final ownership of these spin off firms consists out of three parties, namely; the HEI, investors and the inventor. Finally, the interviewee explains that due to a recent change in the law more spin off firms are being created.
Types and quantity of cooperation	The interviewee states that Anglo-Saxon mentality is more oriented towards spin-offs licensing, while the mentality in other European countries is more focused on joint research and contracts. Moreover the interviewee thinks that there are multiple variations in UBC interaction with different applicable schemes (national/regional/European).
Role of stakeholders in	The respondent identifies the following stakeholders: HEIs, TTOs, network of technological institutions, research centres,

UBC	businesses, local and national government. The roles of each stakeholder change per transaction, however the research teams and the TTO always have a key role in HEI-business interactions. Regarding the stimulation of UBC in Spain, the interviewee says that it is being supported by local as well as national governments. Also the European Programmes such as FP7 and INTERREG are valuable in their support in UBC.
Development relationship of UBC	The interviewee states that once barriers are being overcome, and a first cooperation is started, the relationship is strengthened and they focus on supporting these existing relationships. By informing partners on new patents in their working field, project results and develop interest in certain projects.
The role of identifying good practice (transferability)	The interviewee indicates that identifying good practice contributes to projects being undertaken and increases the likelihood on completing a project successfully.
Barriers in UBC	The interviewee thinks that the SMEs face the highest barriers in their cooperation with HEIs. Mainly, there are communication barriers between SMEs and HEIs because although larger businesses have more experience in communicating with HEIs, the SMEs are inexperienced. Also, SMEs can feel threatened by the academic degrees of HEI employees and SMEs assume cooperating with HEI is too expensive, especially when HEIs are not involved in the same market as the SMEs.
Main drivers of UBC	The interview partner thinks that different drivers exist. On the one hand, the main drivers for are SMEs, the access to external research facilities and the access to funding for their projects, which is also applicable to HEIs. On the other hand, the main drivers for researchers are to get access to more funding when doing a project with a business and the possibility of being employed. As after receiving their degree, they cannot always be employed as a professor.
Transactions	The respondent indicates that regarding European personnel mobility programmes, it is difficult to achieve good results.

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