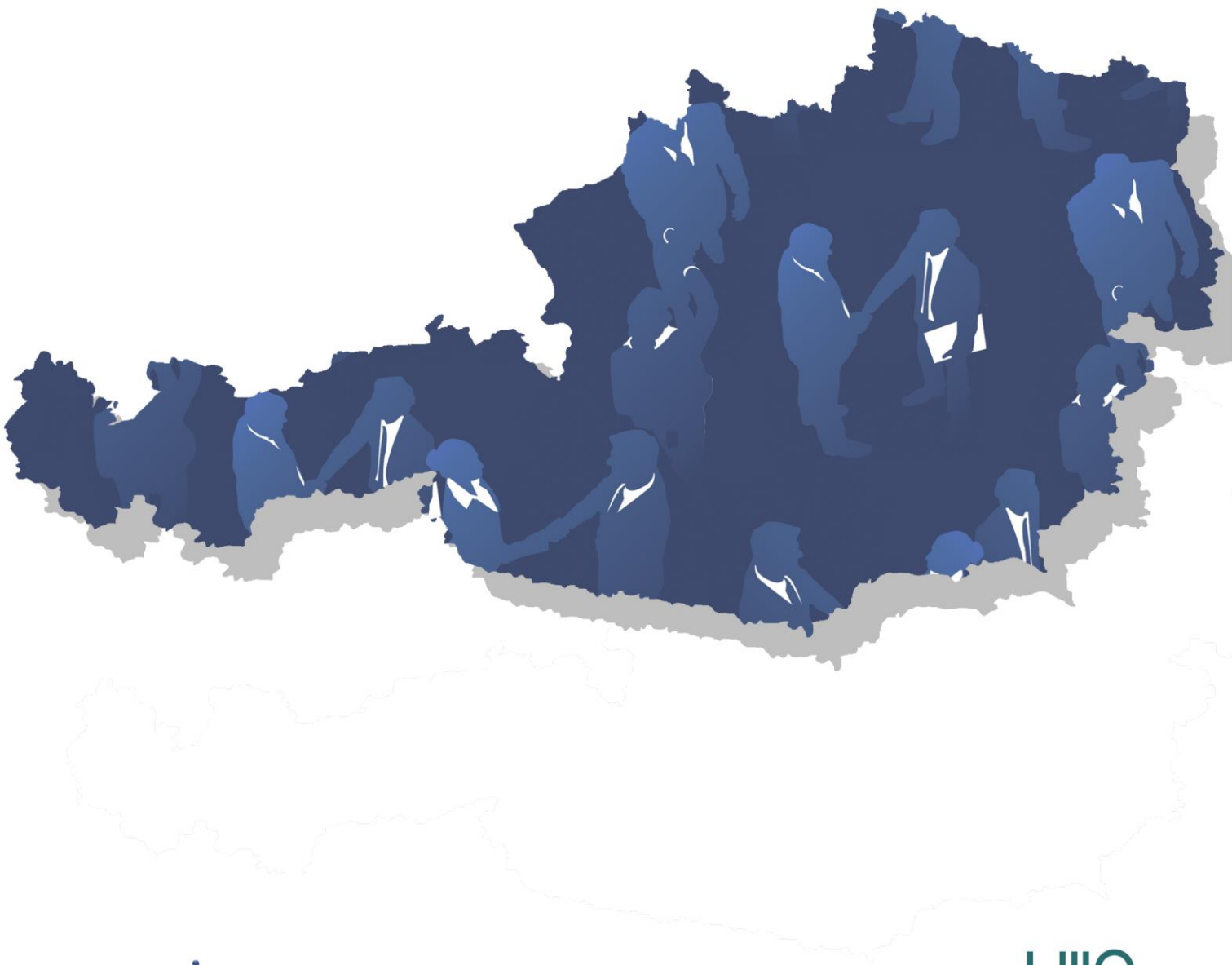


The State of University-Business Cooperation in Austria

Part of the DG Education and Culture
Study on the Cooperation Between
Higher Education Institutions and
Public and Private Organisations in Europe

December 18th, 2013

Supported by the



Abbreviations

EC	European Commission
HEI	Higher Education Institution
LLL	Lifelong Learning
R&D	Research and development
SME	Small- and medium-sized company
S2BMRC	Science-to-Business Marketing Research Centre
TTO	Technology Transfer Office
UB	University-Business
UBC	University-Business Cooperation
UPB	University professional working with business

UBC Country Reports: logic and characteristics

The UBC country reports compare the continental results of the major *State of European UBC* study (Davey et al., 2011), with the results obtained in a specific country. The reports are designed to be complementary to the major study and highlight the diversity amongst European countries. Additionally, by offering more concrete results at national level, it is believed, provides more appropriate decision-making material for most stakeholders, whose jurisdiction is restricted to the regional or country level.

The reports present mostly descriptive data and are not intended to be a comprehensive or detailed study of each of the countries or a ranking among EU countries. Instead, the reports are provided to all stakeholders simultaneously (academics, HEI managers, policy makers at different levels, business, etc.) and unlike the European report, are expected to provide some opportunity for individual stakeholder interpretation and resulting actions, according to their local understanding and different roles within the UBC ecosystem

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Executive summary

There is a lack of commitment to university-business cooperation in Austria

As with their neighbours in Germany, Austria has a focus of university-business cooperation (UBC) in 'Collaboration in R&D' and 'Commercialisation of R&D' results although they perceive their general level of UBC to be much lower than the Germans. There is a difference of opinion between Austrian HEI managers and academics on the extent of UBC *barriers*; however there is consensus that relationships drive UBC, and that overall, Austria has a neutral (not negative) environment for UBC. Crucially though, Austrian HEI managers and academics see low *benefits* from UBC for the academic and the HEI. Furthermore, the development of mechanisms supporting the development of UBC is also deficient. These last two factors, moderately-low perceived *benefits* and moderately-developed supporting mechanisms, explain the moderately-low development of most of the types of UBC. However the question is why? Could the Humboldtian principles surrounding academic freedom be influencing this lack of commitment to UBC?

It seems that the third mission of HEIs (teaching and research traditionally being perceived the first and second) whereby HEIs contribute to social and economic development, is under-developed in Austria. The section on *benefits* clearly underlines this, whereby in Austrian HEIs, UBC is considered part of the HEI mission far less than in the EU. A factor driving this could be that traditionally in Austria there is little influx into HEI management (rectors, deans, members of university boards etc.) coming from outside the universities. This is true especially for 'traditional' universities, where members of HEI management have traditionally (at least partly) been legitimated by internal elections rather than appointments. Despite the high recognition of HEI managers of 'a top-level management committed to UBC', the dedication of resources for UBC (and incentives) is sadly lacking despite that Austrian universities were given institutional autonomy (budget, resources, HR...) from the ministries in 2003/04. Obviously, it will take some more time to build-up management structures to govern such big academic entities. Public universities, however, are still provided with public funding by the Ministry of Science based on a "performance agreement" signed by both parties. Among the key elements of this agreement and the consequent funding indicators, there is practically no relevance given to UBC or mobility between university and business. This may largely, or at least partly, explain the results presented in this report.

About the study

The results presented in this report were from a study commissioned by the European Commission (EC). Surveys were sent out to all registered European HEIs in 33 countries in 2011. In total, 6,280 responses were received from European academics and HEI management (HEI managers and HEI professionals working with industry) whilst from Austria, 169 responses from academics (109) and HEI management (60) were received. The study measured the perceptions of these two groups in respect to their own cooperation efforts and those of their university respectively.

Collaboration and commercialisation of R&D are the most developed forms of UBC

In its university-business cooperation (UBC), Austrian HEIs have a heavy concentration on (1) 'collaboration in R&D' and (2) 'the commercialisation of R&D' results, both being above the European average, whilst other forms of cooperation are all below, and at times well below, the EU average. Whilst overall Austrian HEIs are perceived by HEI managers to be slightly below the EU average for UBC, Austrian academics perceive themselves to be one of the lowest UB collaborators in Europe. Significantly, Austrian HEI manager rate themselves lowest in Europe for development of 'Mobility of academics' and 'Mobility of students' and in the bottom three countries for 'Entrepreneurship' and 'Governance'. The low results are despite the fact that Professors in applied sciences universities are required to have spent time working in business. The results for 'Mobility of students' also seems low considering that student mobility is part of many study programmes in Austria.

HEI managers and academics see UBC *barriers* differently

HEI managers perceive the primary *barriers* to UBC in Austria as: (1) differing motivation / values between university and business, (2) 'lack of financial resources of the business' and (3) 'differing time horizons between university and business', which shows that according to HEI managers, the mismatch in culture between HEIs and business is the biggest *barrier* in Austria. By contrast, Austrian academics perceive the largest *barriers* of UBC to be related to the 'usability of results', with 'relational *barriers*' (culture differences) being perceived the lowest. Additionally, Austrian academics are quite positive in respect to UBC *barriers*, perceiving lower UBC *barriers* than the EU average. A further notable result is that HEI managers in Austria perceive that lack of financial

resources of business to be the major financial *barrier* far greater than a lack of HEI finance for UBC. The Austrian Economy is dominated by SMEs with an emphasis on medium (creating 21.1% of all value in the Austrian economy, compared with the EU average of 18.3%¹) and small enterprises. The strong position of small and medium sized family-owned enterprises (in total, SMEs account for 60.1% of value, compared with 57.6% in the EU²) in the Austrian economy requires consideration by those charged with the responsibility of managing UBC.

Relationships drive cooperation in Austria

Both HEI *managers* and academics in Austria perceive the *drivers* to be relational with the three of the top four *drivers* related to relationship factors. Despite the pessimism of Austrian academics about their extent of UBC, their perception of *drivers* for UBC is above the European average, which raises questions about why they do not undertake more UBC, a question that will be explored more in *benefits*. Furthermore, when compared with the level of UBC *barriers*, we find that both HEI managers and academics in Austria perceive that Austria has a neutral, if not slightly favourable, environment for UBC.

Academics and HEI managers perceive lesser benefits from UBC

Austrian academics perceive the primary winners from UBC to be: (1) business, (2) students (3), *benefits* to the HEI business (though far less than the EU average) and lastly (4) personal *benefits* with a very low amount of academics stating that UBC activities increase their changes of promotion (significantly below the EU average). HEI management state that (1) students are the main winners of UBC, with (2) HEIs, (3) business and (4) society (significantly lower than the EU average) receiving much lower *benefits*. These results imply that, for UBC to increase, both academics and HEIs (from a policy perspective) need to receive greater personal and/or institutional *benefits* for UBC in order to increase UBC activity.

The results on *benefits* are extremely similar to their German counterparts, with both expressing that UBC provides a much lower contribution to the role of the HEI, as well as to the role of the academic, than the European average. An explanation could be found in the commitment in German-speaking countries to the principles of the *Akademische Freiheit* and Humboldt Model of education which reinforces a focus on independence of teaching and research rather than on the universities' *third mission* (in addition to research and teaching) to do with community

engagement. The Humboldt Model has four principles: (i) freedom of teaching and learning, (ii) the unity of teaching and research, (iii) the unity of science and scholarship, and (iv) the primacy of 'pure science' over specialized professional training. These principles advocate the independence of the HEI, as opposed to the belief that HEIs are part of a human resources supply chain, a concept advocated in the *Wilson Report* in the UK and increasingly recognised in European policy and competitiveness initiatives.

UBC supporting mechanisms in Austria need further development

UBC *strategies* are moderately developed in Austria with most of the strategies, significantly 'a vision/mission embracing UBC', the development of 'a strategy for UBC' and internal/external promotion of UBC being well below the EU average, despite incentives for academics being at about the EU average.

Furthermore, apart from 'academics of company boards' and the existence of 'alumni networks', all *structures and approaches* are below the EU average and at a low-or medium to low level of development.

In terms of UBC *activities*, Austria again underperforms against the EU average the European average with 'internally-focused education and workshops focused on both students and academics (particularly entrepreneurship education at a low level of development) well below the EU average.

With the UBC *supporting mechanisms* representing the actions of what can be done to support UBC, it is not surprising to see the extent of Austrian UBC perceived to be low-moderate and below the EU average.

A note on Austrian government initiatives

The incentive system provided by regulation and governmental programs in Austria still does not sufficiently encourage and support UBC for both sides (university and business). This is reflected in the result above. Moreover, the governmental departments responsible for UBC have, for many years, been split among several ministries (BMWF.gv.at, BMVIT.gv.at, BMWFJ.gv.at). Furthermore, a number of funding programmes designed to support collaboration, can only be applied for by 'traditional universities' and not the universities of applied sciences (UAS) e.g. the recent tender of 'Hochschulraum-Strukturmittel'³ (structural funding) or the recent allocation of resources for the establishment of knowledge-transfer centres⁴.

¹ European Commission (2013), *SBA Fact Sheet 2013 – Austria*, <http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2013/austria_en.pdf> accessed on 13.12.2013.

² *ibid*

³ <http://www.bmwf.gv.at/startseite/das-ministerium/presse-und-news/news-details/hochschulraum-strukturmittel-karlheinz-toechterle-15-millionen-euro-fuer-nachhaltige-kooperatione>

⁴ <http://www.awsg.at/Content.Node/innovation-investition/patentservice/foerderungen/98020.php>

Introduction

Background

With the creation of the Europe 2020, the European Union's (EU) growth strategy for the coming decade, and the higher education modernisation agenda, Europe is embracing the need to create a more connected and functional relationship between government, business and HEI in order to increase employment, productivity and social cohesion⁵. If fostering UBC is understood as 'interactions' between HEIs and businesses for mutual *benefit*, then fostering UBC and extracting its value can help society face a number of issues. These issues include universities with the problem of decreasing public funds⁶ help businesses to gain and maintain their competitive advantage in today's dynamic international markets, contribute to the economic development on regional and national level⁷ as well as meet the demands of the labour market to provide more relevant knowledge and skills and greater job prospects of students⁸. Additionally, there are substantial indirect outcomes of UBC including support in the creation of a knowledge economy¹⁰, support for local business¹¹, creation of jobs¹², stimulation of economic growth and increased living standards whilst reducing hindrances to good living¹³. In this context, UBC creates mutual *benefit* for all parties involved, and wider, to society.

Over the last few decades there has been a dramatic shift in the focus of HEIs and policy makers towards the HEI's so-called 'third mission'. Through this, HEIs have had their roles focussed to a greater extent on the need to contribute to society in a more meaningful way through knowledge and technology creation, transfer and exchange¹⁴. In recent years, the focus has been extended to recognise all the ways in which HEIs can contribute to society including *Lifelong learning* (LLL), *Entrepreneurship* or exchanges of workers with businesses as means to reach the third mission. Owing to this, the holistic extraction of value via UBC has become more important for the viability and relevance of HEIs as the *benefits* of closer and better cooperation between HEIs and businesses and the *benefits* for the students have been increasingly recognised.

⁵ European Commission, 2011

⁶ Carayol, 2003

⁷ OECD, 2002

⁸ Bozeman and Boardman, 2013

⁹ Altmann and Ebersberger, 2013

¹⁰ Eitzkowitz & Leydesdorff, 2000

¹¹ Davey et al., 2011

¹² *ibid*

¹³ Eitzkowitz & Leydesdorff, 2000

¹⁴ *ibid*

Objective

The objective of this report is to evaluate the current status of UBC in Austria and benchmark these outcomes against European HEIs. As a result of this analysis, the reader will have a clearer understanding of the extent of cooperation with business. Furthermore, the report aims to highlight the *barriers* and *drivers* preventing or motivating cooperation as well as the extent of development of mechanisms supporting UBC, in comparison with the European average.

Methodology

The survey

The survey was created during a project completed with the EC in a fifteen and a half month study on the cooperation between HEIs and public and private organisations in Europe. The main components of the project were in-depth qualitative interviews with 10 recognised industry experts as well as a major quantitative survey. The survey was translated into 22 languages and sent to all registered European HEIs (numbering over 3,000) in 33 countries during March 2011. Through this, a final sample of 6,280 academics and HEI management was achieved making the study the largest study into cooperation between HEIs and business yet completed in Europe.

Questions were posed to two groups within HEIs. These groups were asked about their perception of UBC:

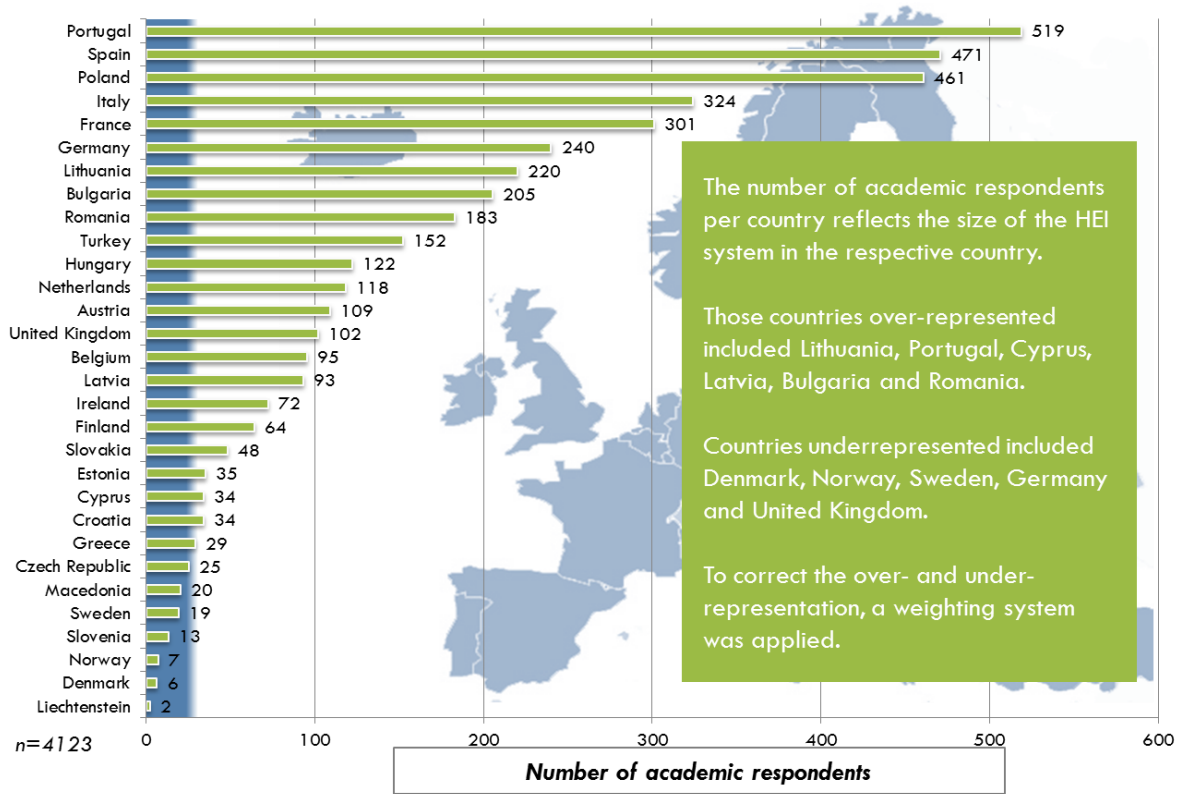
1. **Individual academics** were asked to respond on behalf of themselves.
2. **HEI management** (HEI managers and university professionals working with industry) were asked to respond on behalf of their HEI.

	Focus	Responded on behalf of	Colour code for results
1	Academics	Indv. academics	Green
2	HEIs	HEI management and university professionals working with industry	Orange

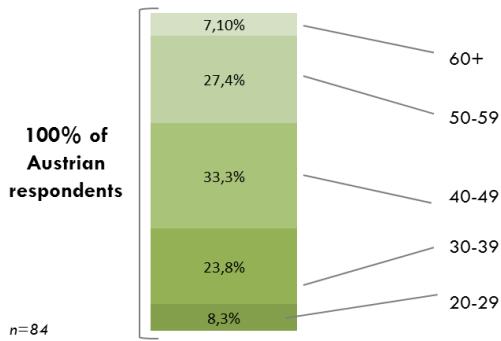
Colour codes have been used throughout the report to identify those results received from the academic (green) and those results received from the HEI (orange)..

Respondents (academic)

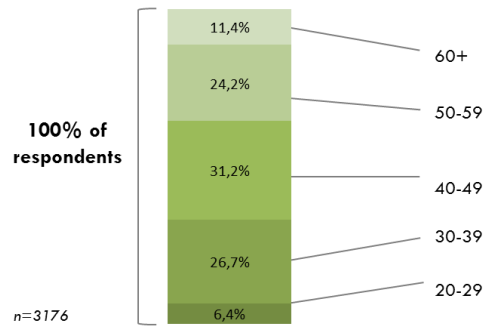
Country



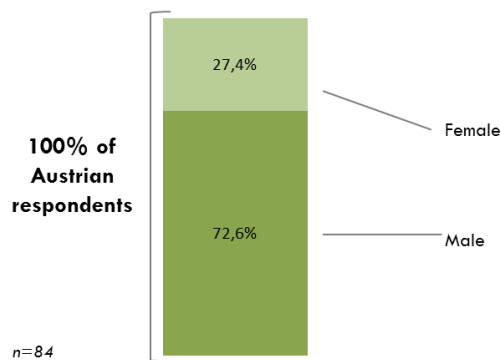
Age of respondents in Austria



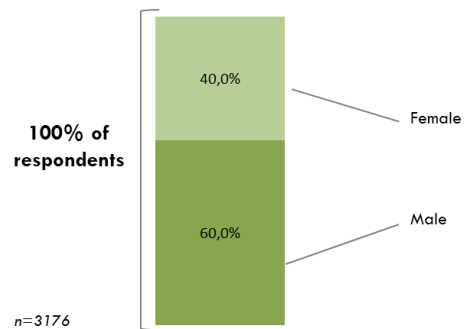
Age of respondents in Europe



Gender of respondents in Austria

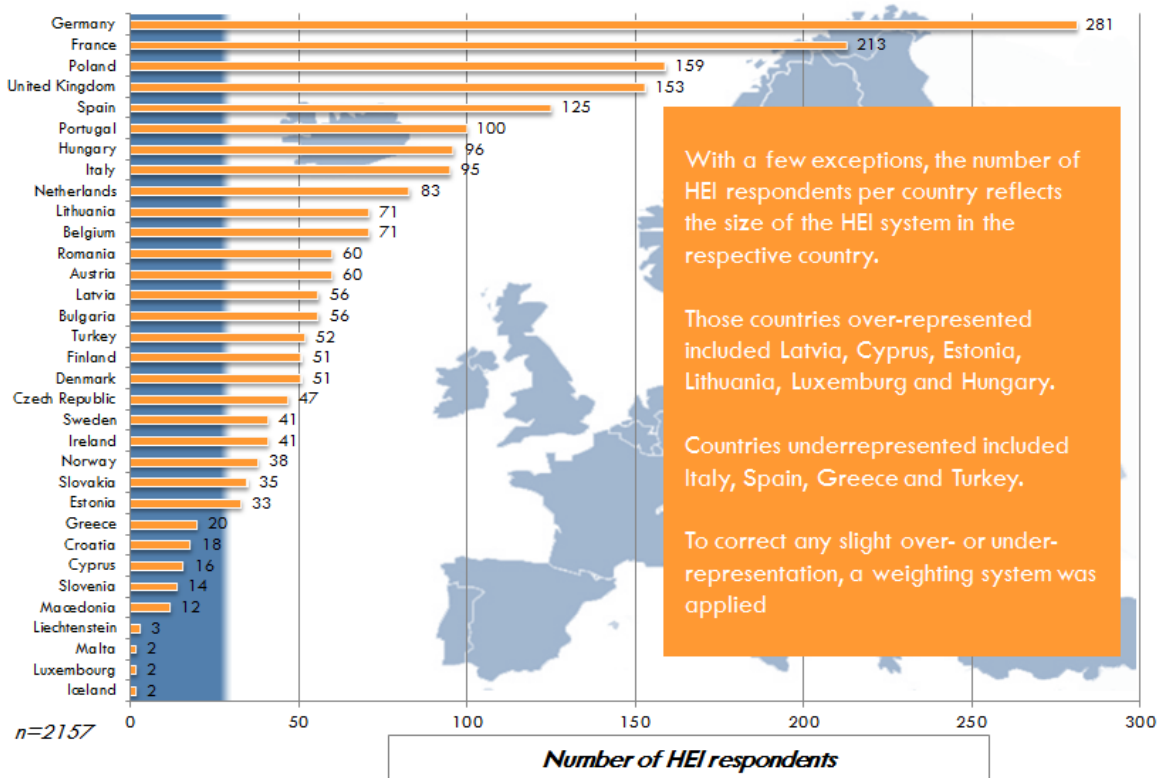


Gender of respondents in Europe

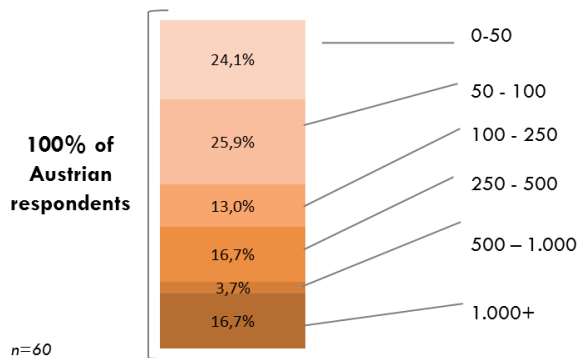


Respondents (HEIs)

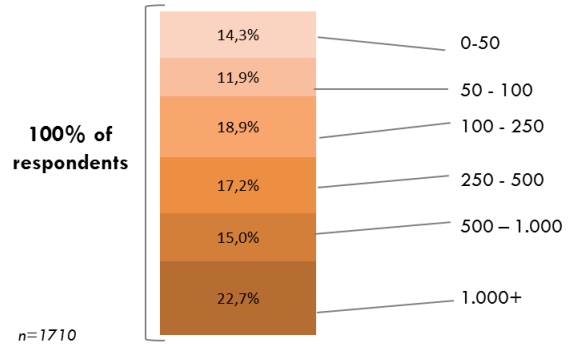
Country



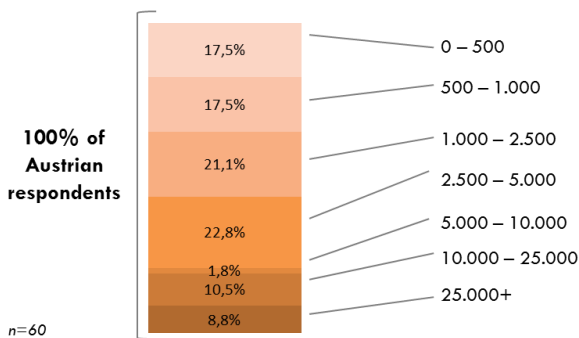
Number of academics per HEI in Austria



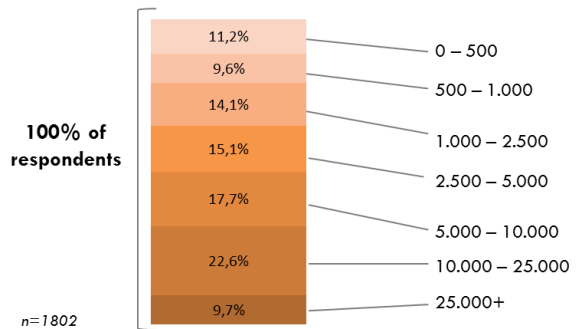
Number of academics per HEI in Europe



Number of students per HEI in Austria



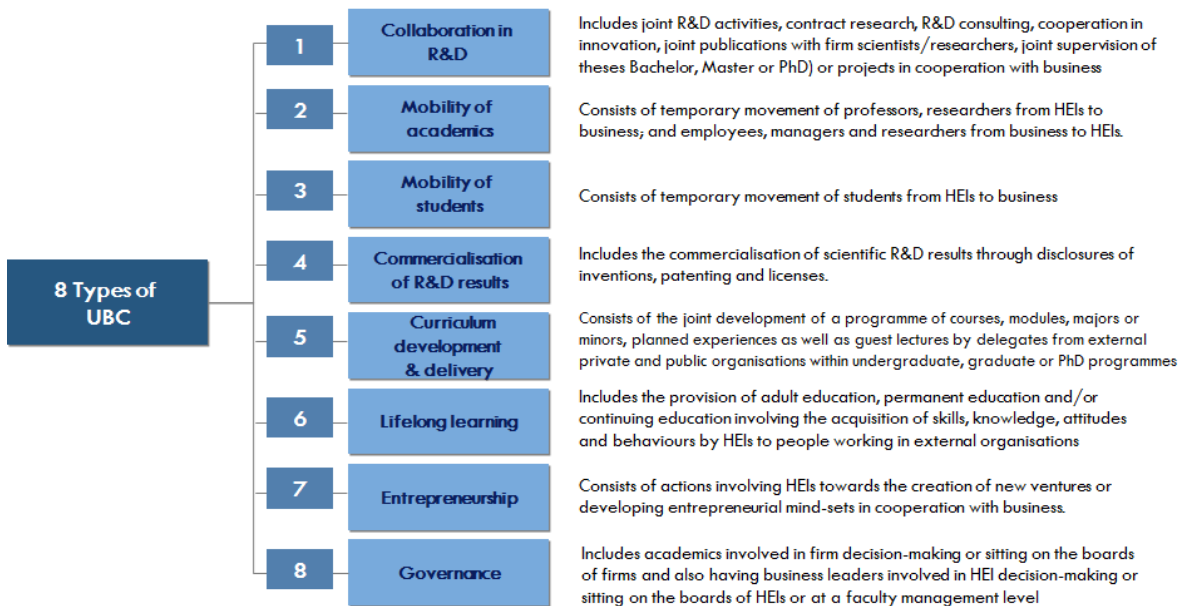
Number of students per HEI in Europe



Results

Extent of UBC

There have been eight types of cooperation recognised between university and business as found in the *State of European UBC Report* with the following descriptions:



3 clusters of HEI cooperation

In respect to cooperation with business it was found that HEIs could also be categorised into 3 clusters:

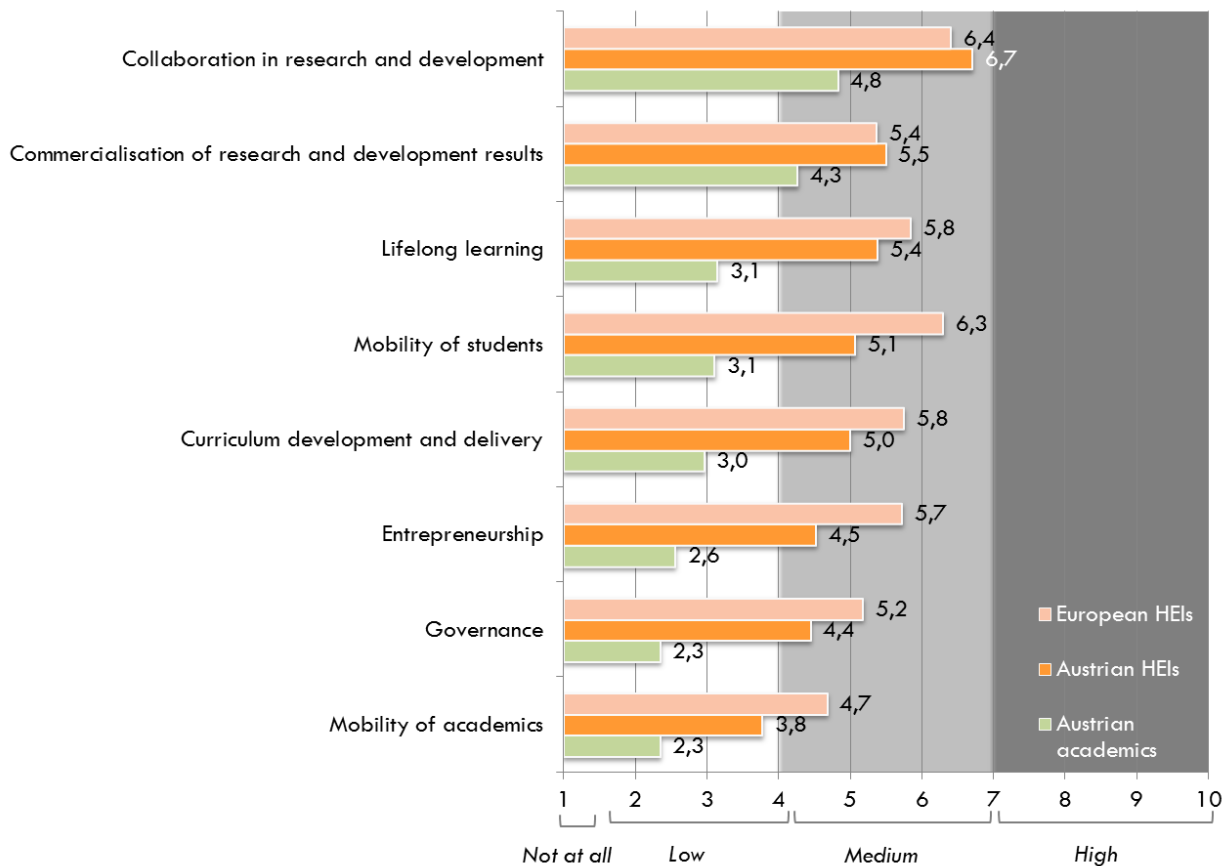
1. the 'innovators' undertaking a higher level for all types of UBC,
2. the 'majority' undertaking a medium level for all types of UBC,
3. the 'laggards' executing generally a low level (or not at all) for all types of UBC.

Relationship among cooperation types

The study identified that HEIs tend to cooperate at a similar level in all UBC types e.g. if they cooperate to a high extent with business in Collaboration in R&D, they cooperated to a similar extent for all the types of UBC.

Extent of UBC in Austria

As answered by HEI management and academics



Extent of cooperation in Austria

There is a medium degree of diversity in the development of the different types of UBC in Austria, with 'Collaboration in R&D' (6.7), 'Commercialisation of R&D results' (5.5) and 'LLL' (5.4) as the most developed types.

Benchmarking Austria

According to the results, Austrian HEI management report the extent of UBC being lower on most types compared to the European average, with the exception of 'Collaboration in R&D' and 'Commercialisation of R&D results'.

In comparison with the European average, the extent of development of UBC types is as follows:

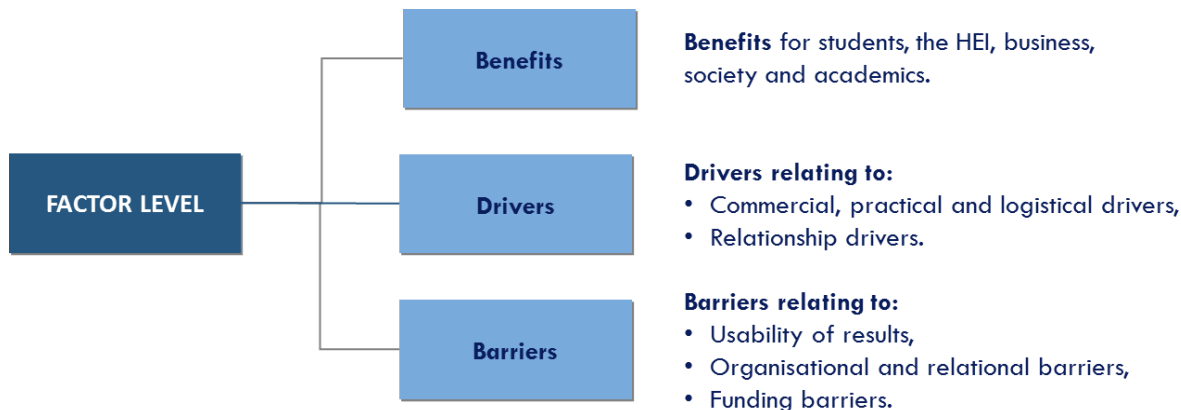
	Austria	Europe
Highly developed	-	-
Moderately developed	<ol style="list-style-type: none"> 1. Collaboration in R&D 2. Commercialisation of R&D results 3. Lifelong learning 4. Mobility of students 5. Curriculum development and delivery 6. Entrepreneurship 7. Governance 	<ol style="list-style-type: none"> 1. Collaboration in R&D 2. Mobility of students 3. Lifelong learning 4. Curriculum development and delivery 5. Entrepreneurship 6. Commercialisation of R&D results 7. Governance 8. Mobility of academics
Low developed	<ol style="list-style-type: none"> 8. Mobility of academics 	

Please note: Austrian academic responses above (in green) reflect academics' opinions about their own extent of UBC, whereas the HEI management have responded on behalf of the HEI. They are not directly comparable however we have put them both in the

same diagram to keep the analysis of UBC types concise. Where you can compare between the academics and HEI manager responses is in respect to which types are the most and least developed types to see if they correspond.

Factors influencing the extent of UBC

The coming section will outline the extent to which a number of factors affect cooperation within business in Austria. These factors have been found to significantly influence cooperation within the European context.



Relationship between barriers and drivers

A *barrier* provides a hindrance or obstacle to do something, while a *driver* provides the motivation to do that thing. More specifically, removing a *barrier* does not create UBC rather it makes UBC possible. Instead it is the *driver* that means that an academic cooperate with business. As an example, even when the lack of funds is nominated as the highest *barrier* (obstacle), owing to the impossibility of cooperating without funds, the presence of funds may not be enough to cooperate if the *relationship drivers* or perceived *benefits* (motivators) are not developed.

Benefits explained

Benefits are the perceived positive outcome (financial and non-financial) from undertaking UBC for the different stakeholders groups that can potentially participate in UBC. This perception can be a reason to increase or decrease their participation or the involvement of other groups. For example, if academics perceive their own *benefits* to be low, that might cause a low participation in UBC and if they perceive that *benefits* for students are high, they might undertake actions that contribute to students' involvement in UBC.

Barriers hindering UBC

Barriers are those obstacles that restrict or inhibit the ability of academics or HEIs to engage in UBC.

The following table explains the extent of relevance of *barriers* to UBC by academics (green) and HEIs (orange) in Austria compared to the EU average. The *barriers* have been factored into 'meta-groups' in order to provide a more strategic understanding.

Three groups of UBC barriers

Resulting from a factor analysis of the results, *barriers* can be categorised in the following groups:

1. *usability of results,*
2. *funding barriers and*
3. *relational barriers.*

Barriers (grouped) to cooperation – Austria vs. Europe

As answered by academics and HEI management

Usability of results	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Austria		Europe	
	ACAD	6.5	ACAD	6.1
HEI	5.7	HEI	6.0	

Funding barriers	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Austria		Europe	
	ACAD	6.3	ACAD	6.5
HEI	6.3	HEI	6.8	

Relational barriers	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Austria		Europe	
	ACAD	6.1	ACAD	6.4
HEI	6.4	HEI	6.2	

Comparing Austrian HEI representative with Austrian academic responses (see table above)

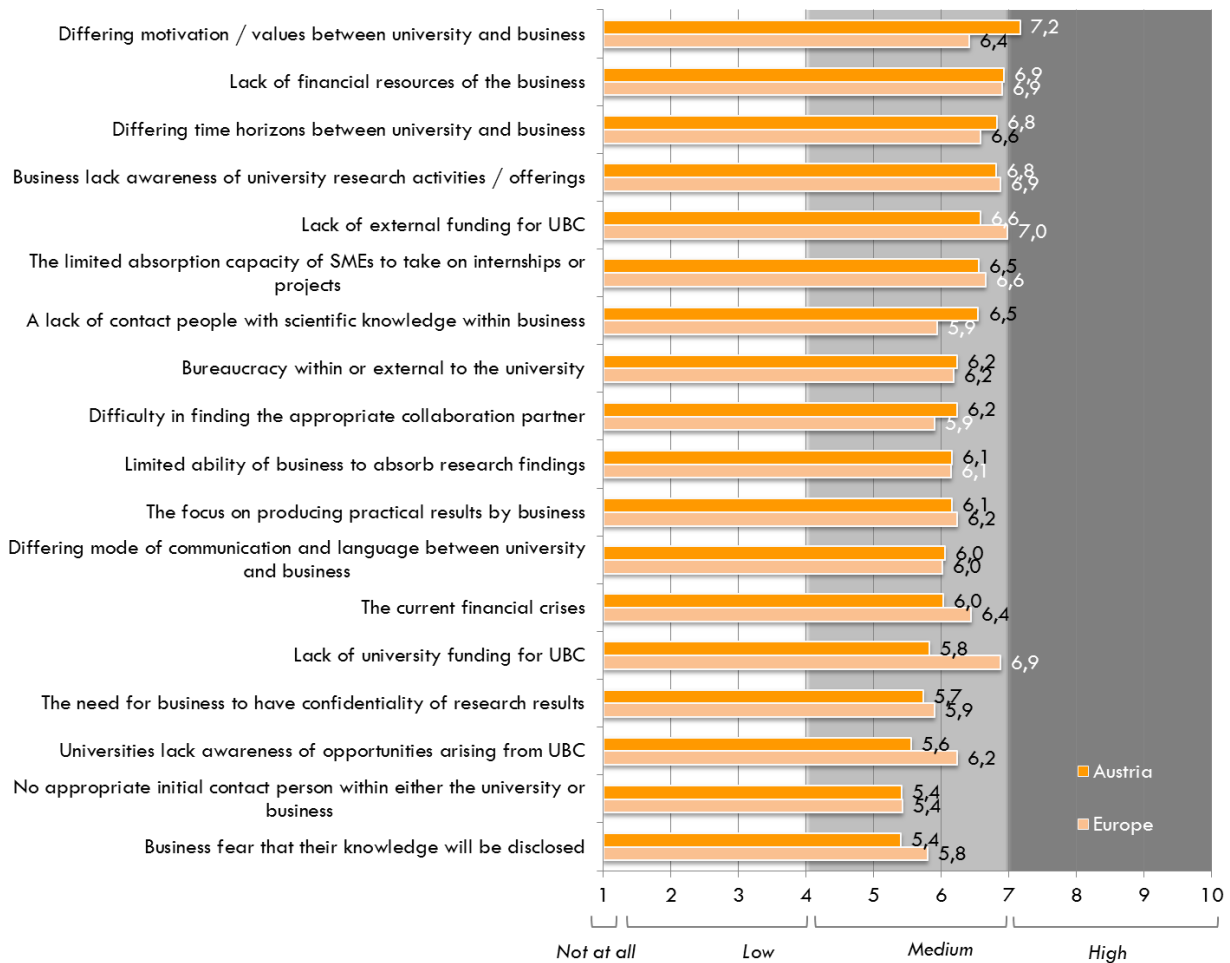
Austrian HEI management and academics assess the *barriers* to a similar extent as their European counterparts, however '*funding barriers*' were perceived to be slightly lower in Austria. Austrian academics and HEI managers differ however on their assessment of '*usability of results*'. Austrian academics perceive these *barriers* to be of a higher relevance than the HEI management. Academics however perceive '*relational barriers*' to be less than HEI managers, which could be explained by the fact that Austria is a small country and has dense networks of

academics. However HEI management identify these '*relational barriers*' as major *barriers*, highlighting a potentially cultural gap between university and business.

It should be mentioned that the Austrian university system still lacks industrial doctorates, professional doctorates or similar doctoral programs and that the universities of applied sciences sector still has no right to offer doctoral programs. The introduction of such doctoral initiatives could provide a major factor in bridging the two cultures and to overcome the mentioned barriers.

Main barriers to cooperation – Austria vs. Europe

As answered by HEI management



Relationship and funding barriers are the biggest barriers to UBC in Austria (see graph above)

The most prominent *barriers* named by the Austrian HEI management are those related to the ‘relationship barriers’ between the HEI and business including ‘different motivation / values between university and business’ (7.2), ‘differing time horizons between university and business’ (6.8) and ‘business lack awareness of university research activities / offerings’ (6.8). In addition, Austrian HEI management reported the ‘lack of financial resources of the business’ (6.9) as a key issue.

Funding and usability of results barriers are perceived lower in Austria than in Europe (see graph above and previous page)

Austrian HEI management assess most *barriers* as less relevant than their European counterparts, with the largest difference being amongst the *funding barriers*. Specifically, ‘lack of university funding for UBC’ (5.8), ‘the current financial crisis’ (6.0) and ‘lack of external funding for UBC’ (6.6) are seen as far less relevant *barriers* in Austrian UBC compared to European average.

With respect to the *usability of results* in Austria it can be stated that HEI management perceive ‘business fear that their knowledge will be disclosed’ (5.4) and ‘the need for business to have confidentiality of research results’ (5.7) to be lesser *barriers* than in the rest of Europe. Interestingly, the first four *barriers* named could be because of the high proportion of SMEs in Austria.

Main barriers to UBC in Austria

1. Different motivation / values between university and business
2. Lack of financial resources of the business
3. Differing time horizons between university and business
4. Business lack awareness of university research activities / offerings
5. Lack of external funding for UBC

Drivers stimulating UBC

Drivers are those factors that encourage academics or HEIs to engage in UBC.

The following table explains the extent of relevance of *drivers* of UBC by academics (green) and HEIs (orange) in Austria compared to the EU average. The *drivers* have been factored into 'meta-groups' in order to provide a more strategic understanding.

Two groups of UBC drivers

Resulting from a factor analysis of the results, *drivers* can be categorised in the following groups:

1. *relationship drivers* and
2. *business drivers*.

Drivers (grouped) of cooperation – Austria vs. Europe

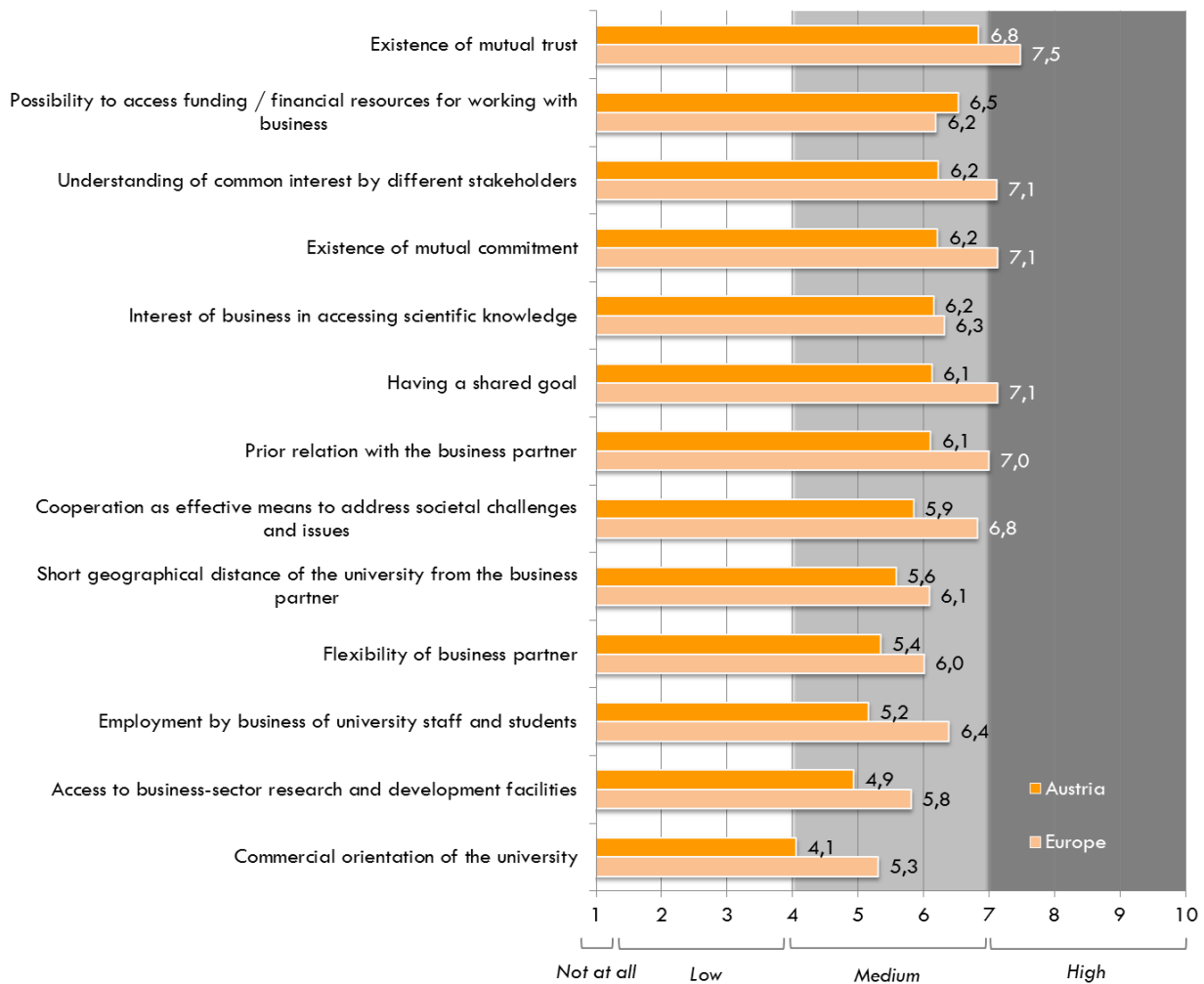
As answered by academics and HEI management

Relationship drivers	Extent of facilitation (1-10)		Extent of facilitation (1-10)	
	Austria		Europe	
		ACAD	7.0	ACAD
	HEI	6.3	HEI	7.0

Business drivers	Extent of facilitation (1-10)		Extent of facilitation (1-10)	
	Austria		Europe	
		ACAD	6.7	ACAD
	HEI	5.4	HEI	6.7

Main drivers of cooperation – Austria vs. Europe

As answered by HEI management



Relationships drive UBC in Austria (see graph above and table from previous page)

HEI management in Austria perceive the highest drivers of UBC to be ‘relationship drivers’ such as ‘existence of mutual trust’ (6.8), ‘understanding of common interest by different stakeholders’ (6.2), ‘existence of mutual commitment’ (6.2). This could be explained by the presence of tight Austrian innovation and academics networks.

Compared to the ‘relationship drivers’, most ‘business drivers’ are seen as significantly less important as drivers, including ‘commercial orientation of the university’ (4.1), ‘access to business-sector research and development facilities’ (4.9), ‘employment by business of university staff and students’ (5.2) and ‘flexibility of business partner’ (5.4), which can be found at the bottom of the above graph.

Therefore it can be said that both HEI management and academics in Austria agree that ‘relationship drivers’ are greater facilitators for UBC than ‘business drivers’. This reflects the people nature of cooperation.

Drivers are perceived to be significantly different by Austrian academics and HEI management (see table from previous page)

Despite this similarity, drivers of UBC are perceived quite differently by Austrian academics compare to HEI management, with academics perceiving the relevance of both the ‘relationship’ and the ‘business drivers’ significantly higher. Austrian HEI management perceive the business drivers to be of a significantly lower extent (5.4) than their European counterparts (6.7).

Main drivers of UBC in Austria

1. Existence of mutual trust
2. Possibility to access funding / financial resources for working with business
3. Understanding of common interest by different stakeholders
4. Existence of mutual commitment
5. Interest of business in accessing scientific knowledge

Benefits of cooperation (academic perspective)

Benefits are the positive results that stakeholders perceive that they obtain from undertaking UBC.

The following table explains the extent of relevance of *benefits* of UBC by academics (green) in Austria compared to the EU average. The *benefits* have been factored into 'meta-groups' to provide a more strategic understanding.

Four groups of UBC benefits for academics

Resulting from a factor analysis of the results, *benefits* for academics can be categorised in the following groups:

1. *benefits for students,*
2. *benefits for business,*
3. *benefits for HEIs and*
4. *personal benefits for academics.*

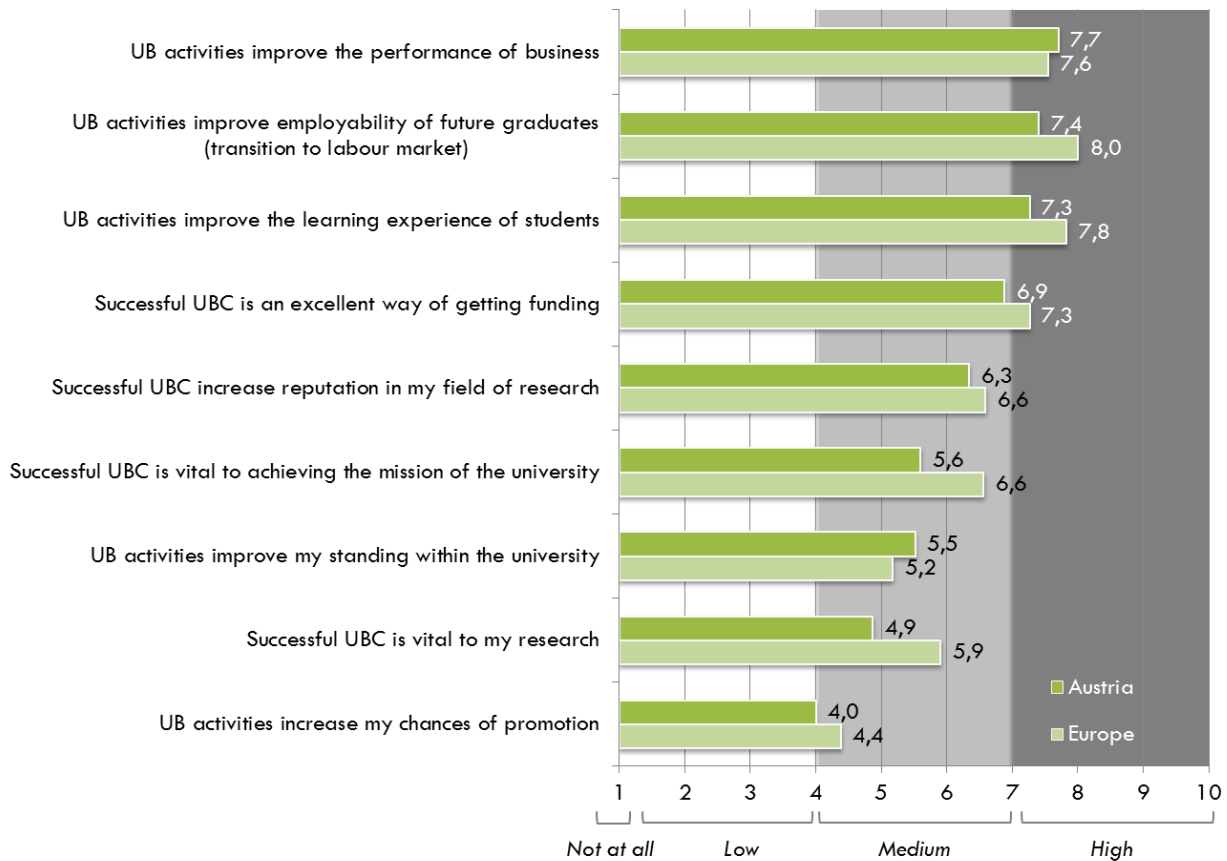
Benefits (grouped) from cooperation – Austria vs. Europe

As answered by academics

Benefits for students <ul style="list-style-type: none"> • UB activities improve employability of future graduates • UB activities improve the learning experience of students 	Extent of importance (1-10)		Extent of importance (1-10)	
	Austria		Europe	
	ACAD	7.3	ACAD	7.9
Benefits for business <ul style="list-style-type: none"> • UB activities improve the performance of business 	Extent of importance (1-10)		Extent of importance (1-10)	
	Austria		Europe	
	ACAD	7.7	ACAD	7.6
Benefits for HEIs <ul style="list-style-type: none"> • Successful UBC is vital to achieving the mission of the HEI 	Extent of importance (1-10)		Extent of importance (1-10)	
	Austria		Europe	
	ACAD	5.6	ACAD	6.6
Benefits for academics <ul style="list-style-type: none"> • Successful UBC is an excellent way of getting funding • Successful UBC increases my reputation in my field of research • Successful UBC is vital to my research • UB activities improve my standing within the university • UBC activities increase my chances of promotion 	Extent of importance (1-10)		Extent of importance (1-10)	
	Austria		Europe	
	ACAD	5.6	ACAD	5.9

Benefits from cooperation – Austria vs. Europe

As answered by academics



Business benefit the most from UBC, say academics

Academics in Austria nominate that the greatest *benefits* from UBC go to business ('University-Business activities improve the performance of business'), followed by *benefits* for students ('University-Business activities improve employability of future graduates' and 'UB activities improve the learning experience of students') and finally rate self-benefit and the *benefit* for the HEI the lowest.

Austrian academics perceive low self-benefit from UBC activities (see graph above)

Whilst academics report that UBC is an excellent way of getting funding (6.9), they are much more negative on their *benefits* with respect to 'an improvement of standing in the university' (5.5), vital for their research (4.9) and especially their increasing chances of promotion (4.0). In addition to the low *self-benefit* from UBC, Austrian academics perceive the *benefit* for the HEI also to be of a low extent (5.6).

These results can be seen more clearly in the grouped results (see previous page). Compared to the relatively high *benefits* for students and business stakeholders (7.7 and 7.3), academics perceive their own and the HEI *benefits* from UBC much lower (5.6 and 5.6).

Austrian academics perceive slightly lower benefits from UBC than in Europe (see graph above)

In comparison with the EU average, Austrian academics see most *benefits* slightly less positively. Two exceptions are the *benefit* 'UB activities improve the performance of business' (7.7 compared to 7.6) and especially 'UB activities improve my standing within the university' (5.5 compared to 5.2).

Overall, Austrian academics perceive the *benefits* from UBC to be significantly lower for the HEI, and to a lesser degree also for themselves and students.

Main benefits of UBC identified by Austrian academics

1. UB activities improve the performance of business
2. UB activities improve employability of future graduates
3. UB activities improve the learning experience of students
4. Successful UBC is an excellent way of getting funding
5. Successful UBC increases my reputation in my field of research

Benefits of cooperation (HEI perspective)

Benefits are the positive results that stakeholders perceive that they obtain from undertaking UBC.

The following table explains the extent of relevance of perceived *benefits* of UBC by HEI management (orange) in Austria compared to the EU average. The *benefits* have been factored into 'meta-groups' in order to provide a more strategic understanding.

Benefits (grouped) from cooperation – Austria vs. Europe

As answered by HEI management

Three groups of UBC benefits for HEIs

Resulting from a factor analysis of the results, *benefits* for HEIs can be categorised in the following groups:

1. *benefits for students,*
2. *benefits for business and society, and*
3. *benefits for HEIs.*

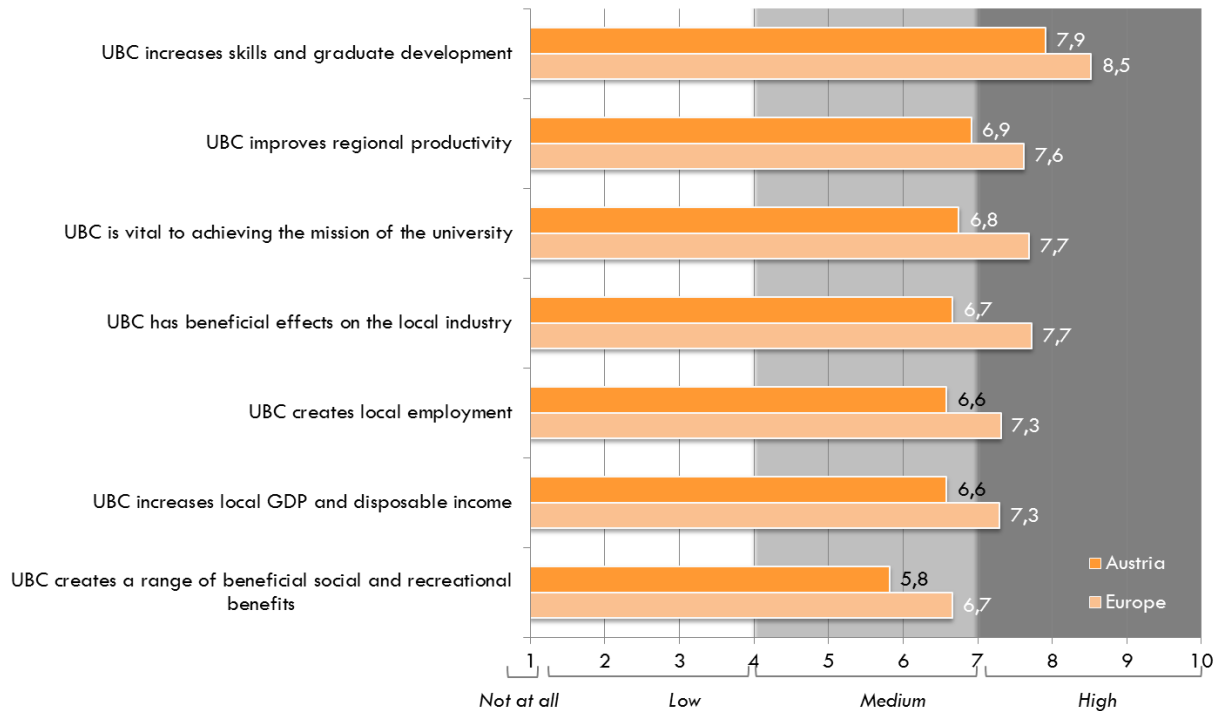
Benefits for the HEI	Extent of importance (1-10)		Extent of importance (1-10)	
	Austria		Europe	
	HEI	6.8	HEI	7.7
<ul style="list-style-type: none"> • UBC is vital to achieving the mission of the HEI. 				

Benefits for students	Extent of importance (1-10)		Extent of importance (1-10)	
	Austria		Europe	
	HEI	7.9	HEI	8.5
<ul style="list-style-type: none"> • UBC increases skills and graduate development 				

Benefits for business and society	Extent of importance (1-10)		Extent of importance (1-10)	
	Austria		Europe	
	HEI	6.6	HEI	7.3
<ul style="list-style-type: none"> • UBC has beneficial effects on the local industry • UBC improves regional productivity • UBC creates local employment • UBC increases local GDP and disposable income • UBC creates a range of beneficial social and recreational benefits 				

Benefits from cooperation – Austria vs. Europe

As answered by HEI management



Students get the most benefit from UBC say HEIs (see table previous page and graph above)

HEI management in Austria perceive most *benefits* from UBC to be of a lower extent, with the *benefits* for 'HEIs' ('UBC is vital to achieving the mission of the HEI'), 'businesses' ('UBC has beneficial effects on the local industry'), the 'region' ('UBC improves regional productivity') and 'society' ('UBC creates local employment') being perceived to receive a medium (in descending order) level of *benefit* from UBC.

All benefits are perceived lower by Austrian HEI management than in Europe (see table previous page and graph above)

Comparing the results to the European average it can be stated that Austrian HEI management see substantially lower *benefits* for students, the HEI and 'business and society' than in Europe. All *benefits* are perceived lower in Austria compared to the European

average. With the largest difference being 'UBC has beneficial *benefits* for local industry' (6.7 vs. 7.7), 'UBC is vital for achieving the mission of industry' (6.8 vs. 7.7) and 'UBC creates a range of beneficial social and recreational *benefits*' (5.8 vs. 6.7). The results show that surveyed HEI managers are not reflecting heavily on their role in the local innovation system and on their contribution to the local economic development.

Main benefits of UBC identified by Austrian HEI management

1. UBC increases skills and graduate development
2. UBC improves regional productivity
3. UBC is vital to achieving the mission of the university
4. UBC has beneficial effect on the local industry
5. UBC creates local employment

Benchmark

...universities in your region!

Assisting governments and universities improve University-Business Cooperation

Using the State of European University-Business Cooperation study results, decision makers, managers and practitioners involved in university-business cooperation can *benefit* from receiving:

1. a benchmark in terms of UBC of your organisation, institution, sector, region or country against others.
2. a clear picture of progress in efforts to increase university-business cooperation,
3. proactive areas of focus for increasing UBC,
4. the required information to advance university-business cooperation within their region or institution

Provided to your organisation in the form of a report and/or presentation, a state of the UBC report dedicated to your organisation can assist with developing greater financial and other *benefits* from University-Business Cooperation



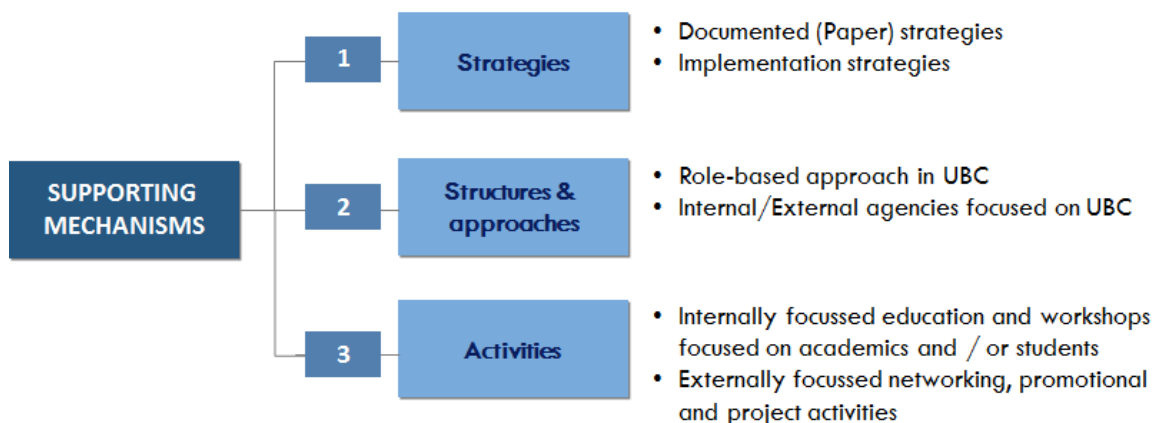
...your university!

Please contact davey@apprimo.com for more information.

Supporting mechanisms for UBC

Supporting mechanisms are interventions designed to support the development of cooperation between HEIs and business.

The coming section will outline the extent to which UBC *Supporting mechanisms* are developed in Austria. The development of these mechanisms has been found to significantly influence cooperation within the European context..



Supporting mechanisms explained

The UBC *supporting mechanisms* constitute the 'action-level', where all stakeholders need to focus their efforts when they want to influence the extent of UBC.

The specific role and importance of *supporting mechanisms* at HEIs has long been recognised in both practice and literature. They are often recognised in multiple ways including (i) in a variety of different names (e.g. interventions, enablers), (ii) captured in a model (e.g. ecosystem, regional innovation system) or (iii) known as individual elements (e.g. activities, infrastructure).

A key finding of the *State of European UBC Report* was that the extent of development of the *supporting mechanisms* was found to significantly affect the extent of general activity between HEIs and business. The nature of the *supporting mechanisms* in terms of (i) responsibility, (ii) expense and (iii) time to impact are summarised in the table below.

	Primary responsibility for the mechanism	Secondary responsibility	Expense	Time to impact
<i>Strategies</i>	HEI management	All UBC stakeholders	Low	Long term
<i>Structures and approaches</i>	HEI / regional Govt. and agencies	Regional UBC stakeholders	Agencies: High Personnel: Med-high	Agencies: Long Personnel: Medium
<i>Operational activities</i>	Knowledge transfer Professionals	Regional UBC stakeholders	Medium	Short-medium term

Strategies for UBC

Strategies are the drafting and implementation of cross-functional decisions by a HEI that will enable it to achieve its long-term objectives with respect to UBC.

The primary responsibility for the creation of UBC strategies is with HEI management as a strategic instrument is usually created by decisions made at a HEI board level.

Two groups of UBC strategies

Resulting from a factor analysis of the results, *strategies* can be categorised in the following groups:

1. *Documented strategies*
2. *Implementation and motivation strategies*

Development of UBC strategies (grouped) – Austria vs. Europe

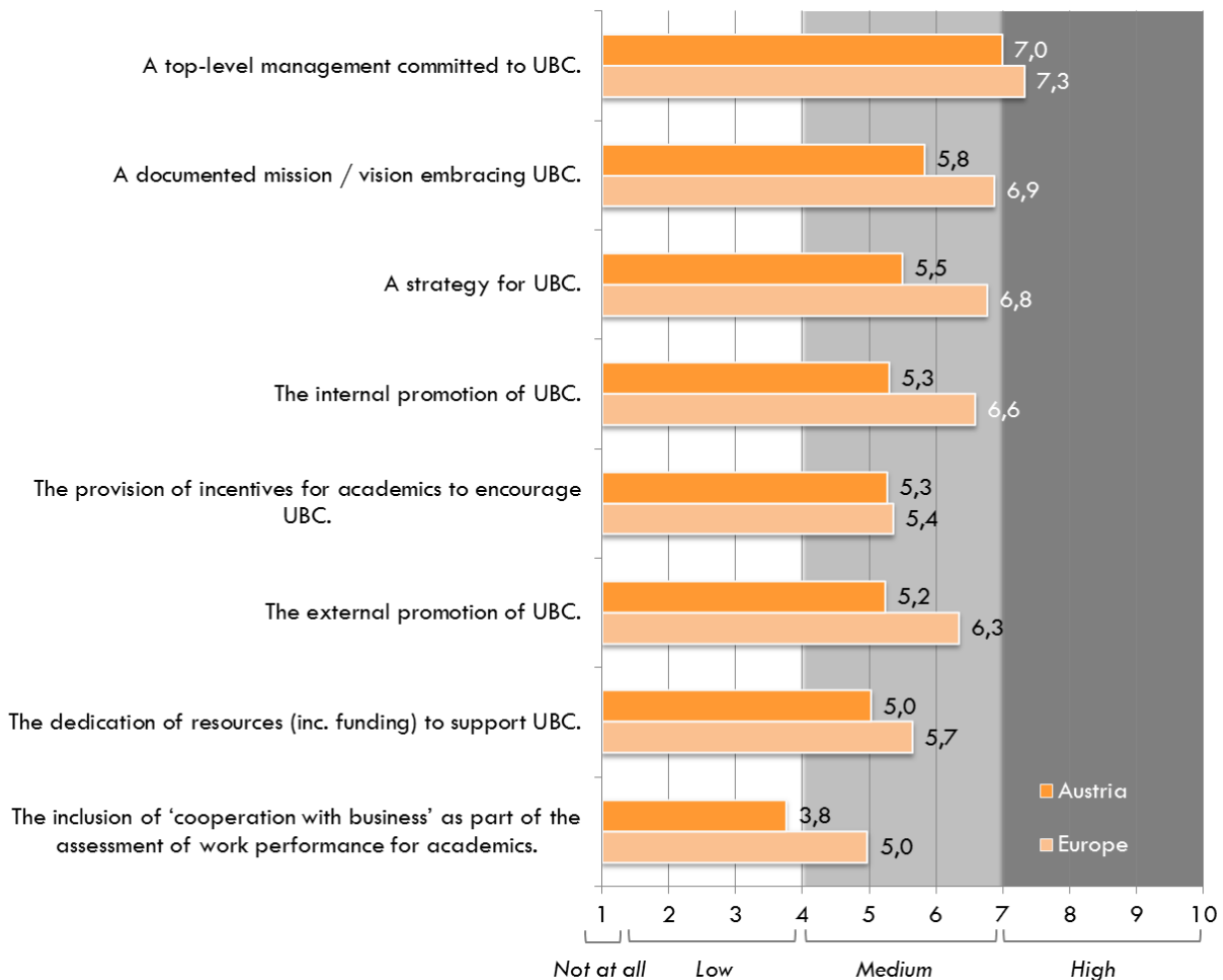
As answered by HEI management

Documented (Paper) strategies	Extent of development (1-10)		Extent of development (1-10)	
	Austria		Europe	
<ul style="list-style-type: none"> • A top-level management committed to University-Business cooperation, • A documented mission / vision embracing University-Business cooperation, • A strategy for University-Business cooperation, • The internal promotion of University-Business cooperation., • The external promotion of University-Business cooperation. 	HEI	5.8	HEI	6.8

Implementation and motivation strategies	Extent of development (1-10)		Extent of development (1-10)	
	Austria		Europe	
<ul style="list-style-type: none"> • The dedication of resources (inc. funding) to support University-Business cooperation, • The provision of incentives for academics to encourage University-Business cooperation, • The inclusion of 'cooperation with business' as part of the assessment of work performance for academics. 	HEI	4.7	HEI	5.4

Development of UBC strategies – Austria vs. Europe

As answered by HEI management



Documented (paper) strategies are the most developed strategies in Austria (see graph above)

The most developed UBC *strategies* in Austria, as reported by Austrian HEI management, are 'a top-level management committed to UBC' (7.0), 'a documented mission / vision embracing UBC' (5.8) and 'a strategy for UBC' (5.5). On the other extreme, 'the inclusion of cooperation with business as part of the assessment of work performance for academics' (3.8), 'the dedication of resources, incl. funding, to support UBC' (5.0) and 'the external promotion of UBC' (5.2) are only developed to a lower degree (compared to other *strategies*).

Strategies are of a low extent of development in Austria in comparison to Europe (see graph above)

When compared to the European average, Austria shows a significantly lower extent of 'documented' and 'implementation' *strategies*. With the exception of 'a top-level management committed to UBC' and 'the provision of incentives for academics to encourage UBC', all strategies are perceived significantly lower in Austria. The largest gap is found in the 'internal

promotion of UBC' and 'a strategy for UBC', which are far lower (-1.3) than the European average.

On a factored (grouped) level, 'documented strategies' are significantly more developed in Austria than 'implementation and motivation strategies' supporting UBC.

UBC strategies in Austria	
Highly developed	1. A top-level management committed to UBC
Moderately developed	2. A documented mission / vision embracing UBC
	3. A strategy for UBC
	4. The internal promotion of UBC
	5. The provision of incentives for academics to encourage UBC
	6. The external promotion of UBC
	7. The dedication of resources (incl. funding) to support UBC
	8. The inclusion of 'cooperation with business' as part of the assessment of work performance for academics

Structures and approaches for UBC

UBC *structures and approaches* are mechanisms created as a result of top-level strategic decisions within (or related to) a HEI. They are enablers of UBC and include the creation or development of positions or agencies put in place in order to promote, develop or implement UBC with a mid to long-term focus. They can be created within the HEI or externally, as a bridge between the HEI and business. *Structures and approaches* usually involve significant investment and can be funded by the HEI, the government, business or a combination of these sources.

Two groups of UBC structures and approaches

Resulting from a factor analysis of the results, *structures and approaches* can be categorised in the following groups:

1. *the creation and /or expansion of positions (personnel) and*
2. *agencies (units of focus).*

Development of UBC structures and approaches (grouped) – Austria vs. Europe

As answered by HEI management

Roles-based approaches in UBC	Extent of development (1-10)		Extent of development (1-10)	
	Austria		Europe	
	HEI	4.9	HEI	5.4
<ul style="list-style-type: none"> • The presence of academics on company boards, • The presence of business people on the HEI board, • Board member or vice rector positions for UBC. • The practise of recruiting industry professionals into the knowledge transfer area., • An alumni network. 				

Internal/External agencies focused on UBC	Extent of development (1-10)		Extent of development (1-10)	
	Austria		Europe	
	HEI	3.7	HEI	5.3
<ul style="list-style-type: none"> • Career offices within the HEI, • Agencies external to the HEI dedicated to UBC • Agencies (internal) within the HEI dedicated to UBC, • Incubators for the development of new business. 				

Structures and approaches are of a medium/low extent of development in Austria (see table above)

The extent of development of UBC *structures and approaches* in Austria shows that 'role-based approaches in UBC' are significantly more developed than 'internal/external agencies focused on UBC' (4.9 compared to 3.7). This is supported by the result shown in the diagram on the next page whereby the 'role-based approach' is evident through the development of 'alumni networks' (6.0), 'the presence of business people on the university board' (5.0) and 'the presence of academics on company boards (4.6).

Especially the agencies focussed on UBC are of a low development in Austria, with 'the career office within the university' (3.5), 'incubators for the development of new business' (3.5) and 'agencies within the

university dedicated to UBC' (3.9) being the lowest developed types.

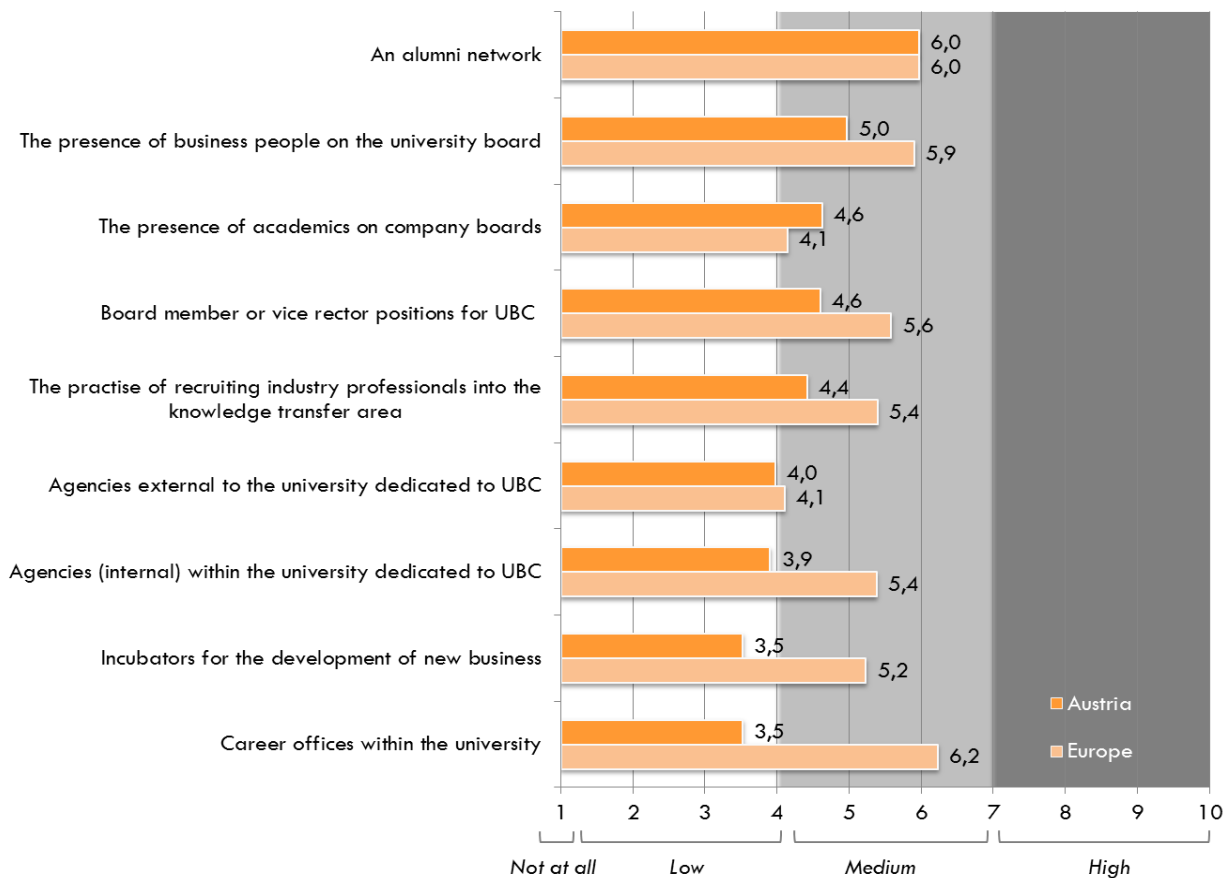
Significantly lower development of structures and approaches to Europe

The extent of development of UBC *structures and approaches* in Austria are considerably lower than the European average, with the largest differences are found in the *internal/external agencies focussed on UBC* (3.7 vs. 5.3). Additionally, as can be seen in the diagram on the next page, 'career offices', 'incubators' and 'internal agencies' are perceived to be lowly (3.5, 3.5 and 3.9).

The *role-based approaches in UBC* are of a similar but slightly lower development in Austria, with 'the presence of academics on company boards' being the exception (4.6 vs. 4.1).

Development of UBC structures and approaches –Austria vs. Europe

As answered by HEI management



Medium developed structures and approaches	<ol style="list-style-type: none"> 1. An alumni network 2. The presence of business people on the HEI board 3. The presence of academics on company boards 4. Board member or vice rector positions for UBC 5. The practise of recruiting industry professionals into the knowledge transfer area 6. Agencies external to the university dedicated to UBC
Low developed structures and approaches	<ol style="list-style-type: none"> 7. Agencies (internal) within the HEI dedicated to UBC 8. Incubators for the development of new business 9. Career offices within the university

Incubators for the development of new business

The low result for 'Incubators for the development of new business' is somehow counter intuitive. There are eight regional centres for academic start-up support in Austria (AplusB – Academia + Business) financed by the Ministry of Innovation (BMVIT) rather than the Ministry of Science (BMWVF).

These centres are closely related to the HEI. As a matter of fact, each of the eight centres is (partially) owned by the local and regional HEIs. This funding scheme and its integration in the national innovation system are quite well developed and have been in place for some years. The results therefore show a lack of internal awareness for the services provided by the centres and a lack of strategic integration of these centres into the HEIs internal service portfolio.

Operational activities for UBC

Operational activities are actions of a practical and immediate nature undertaken by actors within HEIs, governments, regional agencies and business to create and support UBC. *Operational activities* are usually the *supporting mechanisms* that require the lowest financial investment and the lowest commitment and whose scope and volume can be more easily described, measured and managed.

Three groups of UBC operational activities

Resulting from a factor analysis of the results, *Operational activities* can be categorised in the following groups:

1. *Internally focused education and workshops focused on academics*
2. *Internally focused education and workshops focused on students*
3. *Externally focused networking, promotional and project activities*

Development of UBC operational activities (grouped) – Austria vs. Europe

As answered by HEI management

Internally focused education and workshops focused on <u>academics</u>	Extent of development (1-10)		Extent of development (1-10)	
	Austria		Europe	
	HEI	4.7	HEI	5.3
<ul style="list-style-type: none"> • Workshops, information sessions and forums for University-Business collaboration targeting academics, • Entrepreneurship education offered to academics. 				

Internally focused education and workshops focused on <u>students</u>	Extent of development (1-10)		Extent of development (1-10)	
	Austria		Europe	
	HEI	3.8	HEI	6.3
<ul style="list-style-type: none"> • Entrepreneurship education offered to students. 				

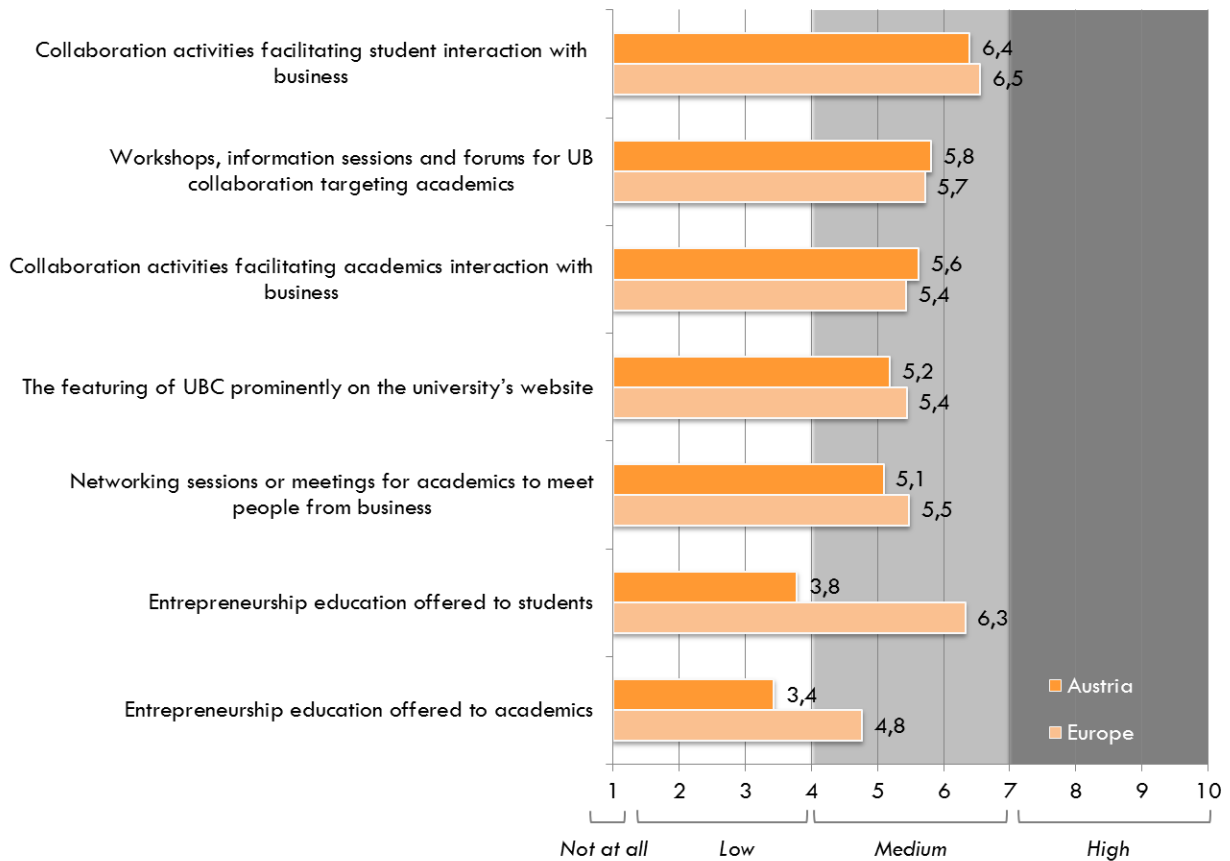
Externally focused networking, promotional and project activities	Extent of development (1-10)		Extent of development (1-10)	
	Austria		Europe	
	HEI	5.6	HEI	5.7
<ul style="list-style-type: none"> • Networking sessions or meetings for academics to meet people from business, • The featuring of University-Business cooperation prominently on the HEI's website, • Collaboration activities facilitating student interaction with business, • Collaboration activities facilitating academics interaction with business. 				

On a factored (grouped) level, it can be summarised that Austria is slightly less developed than the European average with respect to 'externally focused networking, promotional and project activities' (5.6 compared to 5.7) as well as 'internally focused

education and workshops focused on academics' (4.7 compared to 5.3). With respect to internal activities focused on students, however, Austria lags far behind the European average (3.8 compared to 6.3).

Development of UBC operational activities – Austria vs. Europe

As answered by HEI management



Networking and promotion are the focus of UBC activities in Austria (see graph this page)

Regarding 'collaboration activities facilitating student interaction with business' Austria is very well advanced, and on a similar level as the rest of Europe (6.4 vs. 6.5). Moreover, 'workshops, information sessions and forums for UBC targeting academics' (5.8 vs. 5.7), 'collaboration activities facilitating academics interaction with business' (5.6 vs. 5.4) and 'featuring UBC prominently on the university's website' (5.2 vs. 5.44) are developed to a similar degree in Austria as in Europe generally.

Large difference in Entrepreneurship education compared to Europe (see graph this page)

'Entrepreneurship education offered to students (3.8) and to academics (3.4) are lowly developed. Further emphasising this lack of development, in comparison to the European average, the entrepreneurship education offered to students even scores 2.5 lower.

The low extent of entrepreneurship education for students may have a number of reasons: The dedication of public universities to the Humboldtian tradition and principles, the few incentives in the performance agreements between the Ministry of Science and the public universities and the lack of entrepreneurial tradition, culture and mind-set in the

Austrian society and population could all be explanatory factors.

Moderately developed	<ol style="list-style-type: none"> 1. Collaboration activities facilitating student interaction with business 2. Workshops, information sessions and forums for UBC targeting academics 3. Collaboration activities facilitating academic interaction with business 4. The featuring of UBC prominently on the university's website 5. Networking sessions or meetings for academics to meet people from business
Lowly developed	<ol style="list-style-type: none"> 6. Entrepreneurship education offered to students 7. Entrepreneurship education offered to academics

The UBC Ecosystem

The UBC ecosystem is a model for understanding the important elements affecting University-Business Cooperation (UBC)

Model created by

Todd Davey, Victoria Galan Muros, Arno Meerman.

Model validation partners

Science-to-Business Marketing Research Centre, UIIN, apprimo UG

Co-created by

105 practitioners validating the model in their work.

The model relationships have been scientifically validated by the Science-to-Business Marketing Research Centre

1 Indirect outcome (society)

2 Direct outcome (actors)

3 University-Business Cooperation (UBC) types

4 Influencing factors

5 Supporting mechanisms

6 Key stakeholders

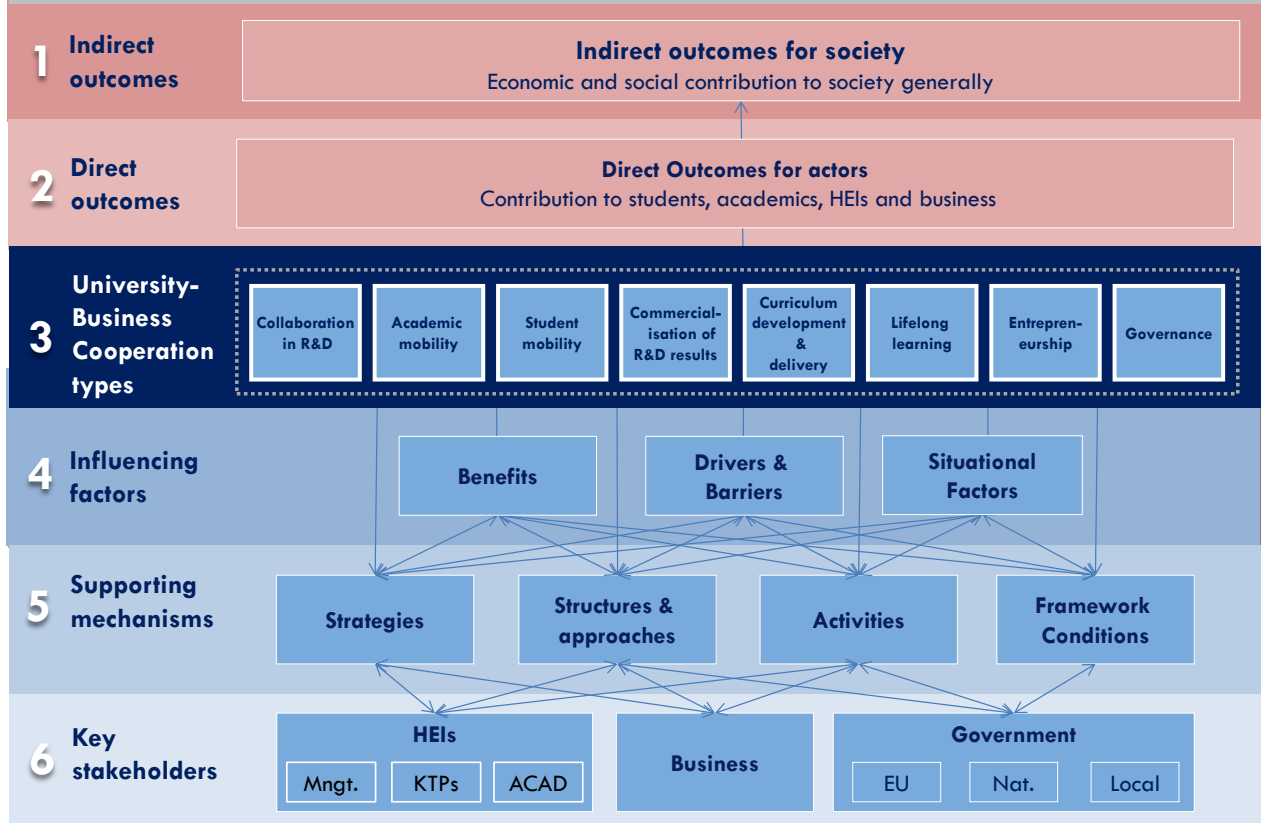
Are you?

- attempting to develop UBC within your organisation?
- repetitively thinking about the factors affecting cooperation between university and business as well as their how they relate to each other?
- trying to foster open innovation involving universities?
- continually confronted with the challenge of creating better relationships between HEIs and business?
- a revolutionary trying to match researchers with business partners?

... if you answered 'yes' to any of these questions, you are not alone: this model was developed by people like you for these reasons



UBC ECOSYSTEM MODEL > Detailed



6 Ecosystem Elements (and their key findings)

1. UBC is vital in creating a knowledge society
2. UBC provides direct outcomes for students, HEIs, academics and businesses
3. Those UBC types with more direct, measurable, and promotable *benefits* are the most developed (e.g. *Collaboration in R&D*, *Mobility of students*)
- 4a. Situational factors (e.g. age, faculty) help to explain UBC but there is little that can be implemented from these results
- 4b. Lack of funding and excess of bureaucracy at all levels (HEI, national, European) are the highest *barriers* to UBC
- 4c. Personal relationships drive UBC. It's a people game!
- 4d. Perceptions of high personal *benefits* & incentives are motivators of UBC
5. The creation and development of *supporting mechanisms* (especially those with the highest impact) are critical for UBC
6. In the UBC ecosystem, the multiple actors need to work cooperatively and in a coordinated manner

UBC ECOSYSTEM Layers explained		All aspects are measurable (benchmarking)
1 Indirect Impact	Impact level	How it impacts society
2 Direct outcomes	Outcome level	How it affects stakeholders
3 University-Business Cooperation types	Result level	What occurs
4 Influencing factors	Factor level	What you have to consider
5 Supporting mechanisms	Action level	What you can do
6 Key stakeholders	Stakeholder level	

Please go to <http://ub-cooperation.eu/pdf/UBCECO.pdf> for more information or contact davey@apprimo.com.

References

- Altmann, A., Ebersberger, B. (2013, Eds.): *Universities in Change, Managing Higher Education Institutions in the Age of Globalization*, Springer, N.Y., ISBN 978-1-4614-4590-6
- Bozeman, B., Boardman, C. (2013). Academic Faculty in University Research Centers: Neither Capitalism's Slaves nor Teaching Fugitives. *The Journal of Higher Education*, 84(1), 88-120.
- Carayol, N. (2003), Objectives, Agreements and Matching in Science–Industry Collaborations: Reassembling the Pieces of the Puzzle. *Research Policy*, 32(6), 887-908.
- Davey, T., Baaken, T., Galán-Muros, V., Meerman, A. (2011). Study on the cooperation between Higher Education Institutions and Public and Private Organisations in Europe. European Commission, DG Education and Culture, Brussels, Belgium, ISBN 978-92-79-23167-4.
- Etzkowitz, H., Leydesdorff, L. (2000). The dynamics of innovation: From National Systems and “Mode 2” to a Triple Helix of university-industry-government relations. *Research Policy*, 29(2), 109–123
- European Commission (2011). Council conclusions on the role of education and training in the implementation of the ‘Europe 2020 strategy. *Official Journal of the European Union* (2011/C 70/01)
- OECD, Organisation for Economic Cooperation and Development (2002). Benchmarking science-industry relationships. Accessed from <http://ep2010.salzburgresearch.at/knowledge_base/oecd_2002.pdf>, [25 August 2013].

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