

The State of University-Business Cooperation in Belgium

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

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Abbreviations

EC	European Commission
HEI	Higher Education Institution
KTPs	Knowledge transfer professionals
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, the country specific report 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

Belgium represents the European average in respect to university-business cooperation

The development of and conditions for University-Business Cooperation (UBC) in Belgium by-in-large equate with the European average with a few exceptions. Like many of the north-western European countries, the leading types of UBC are *Collaboration in R&D* and *Mobility of students*, the greatest *Drivers* of UBC are relationships and academics perceive themselves to get the least amount of benefits from UBC. Furthermore, the development of *Supporting mechanisms* are either slightly above or slightly below the European average including: *Strategies* (moderate development, below the EU average), *Structures and approaches* (moderate development, below the EU average) and *Activities* (moderate to high development, above the EU average). All of these results highlight obvious areas for improvement. Where Belgium is unique is in relation to *Barriers*, whereby both HEI managers and academics highlight issues working with local business as the largest *Barriers* including their lack of resources and also ability to absorb knowledge from the HEI. With Belgium's SMEs supplying 68.9% of jobs (EU average of 66.5%) and a high amount of micro-business¹, the offering of the HEI needs to be better tailored to SMEs.

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 Belgium, 71 responses from academics (95) and HEI management (166) 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 in R&D and Student mobility are the most developed forms of UBC

The most developed types on UBC in Belgium are: (1) *Collaboration in R&D*, (2) *Mobility of students*, and (3) *Entrepreneurship* with the least developed type being: *Mobility of academics* and *Governance*. In respect to the European average, Belgium performs at about same level as the European average, with a slightly

better performance in *Entrepreneurship*, which aligns with other studies on academic entrepreneurship in Europe.²

The nature of local business and financing are the biggest *Barriers* to UBC in Belgium

The primary Barriers to UBC in Belgium are: (1) 'the limited absorption capacity of SMEs' and (2) 'lack of financial resources of the business', which shows that the nature of local business in Belgium is seen as a *Barrier* to UBC in Belgium. '*Funding Barriers*' are perceived by Belgian HEI management and academics to be the biggest type of *Barrier*. The *Barriers* of UBC in Belgium were rated by both groups as slightly lower than the European average. A point of difference between HEI managers and academics is that academics perceive bureaucracy to be a far higher *Barrier* (6.8) than HEI managers (5.7).

Relationships drive cooperation in Belgium

As in Europe generally, Belgian HEI management and academics alike name '*relationship Drivers*' such as (1) 'existence of mutual trust', (2) 'prior relation with the business partner' and (3) 'having a shared goal' were nominated as the biggest Drivers of UBC. This suggests that greater effort to bring academics together with business could be a focus for further improvement of cooperation. Furthermore, both Belgian academics and HEI management also perceive *Drivers* for UBC to be slightly higher than their European counterparts, although HEI managers perceive '*business Drivers*' as somewhat lower in Belgium.

Combining the results for *Barriers* and *Drivers*, both HEI management and academics agree that Belgium has a slightly positive environment for UBC.

Academics perceive lesser personal benefit from UBC

Belgian academics perceive the primary winners from UBC to be: (1) students, (2) business (though less than the EU average), (3), benefits to the HEI and lastly (4) personal benefits, with a very low amount of academics stating that UBC *Activities* increase their changes of promotion (below the EU average). These results imply that academics need to receive (or perceive) greater personal benefits from their HEI in terms of chances of promotion in order to increase UBC activity. There are however large differences between HEIs, since the way HEIs implement their incentive schemes vary. HEI management state that (1) the HEI (significantly higher than the EU average), (2)

¹ European Commission (2013), *SBA Fact Sheet 2013 – Belgium*, <http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2013/belgium_en.pdf> accessed on 13.11.2013.

² De Cleyn et al. 2010

students (significantly higher than the EU average) are the biggest winners from UBC whilst (3) business and (4) society (though much less than the EU average) receive the least.

UBC *Supporting mechanisms* are developed to a similar level to the EU average

The most developed UBC *Strategies* in Belgium are (1) A top-level management committed to UBC, (2) A documented mission / vision embracing UBC, and (3) A strategy for UBC. There is some room for improvement particularly in respect to '*implementation Strategies*' especially in 'providing incentives to academics for UBC' and 'including UBC in the assessment of academics work performance', which aligns with current legislation that provide the HEIs with incentives (amount of government funding depends on funding obtained through UBC and/or the amount of spin-offs created), rather than the academics. Overall, *Strategies* are developed to a level slightly below the European average, even though the HEI's funding partially depends on their engagement in UBC activities.

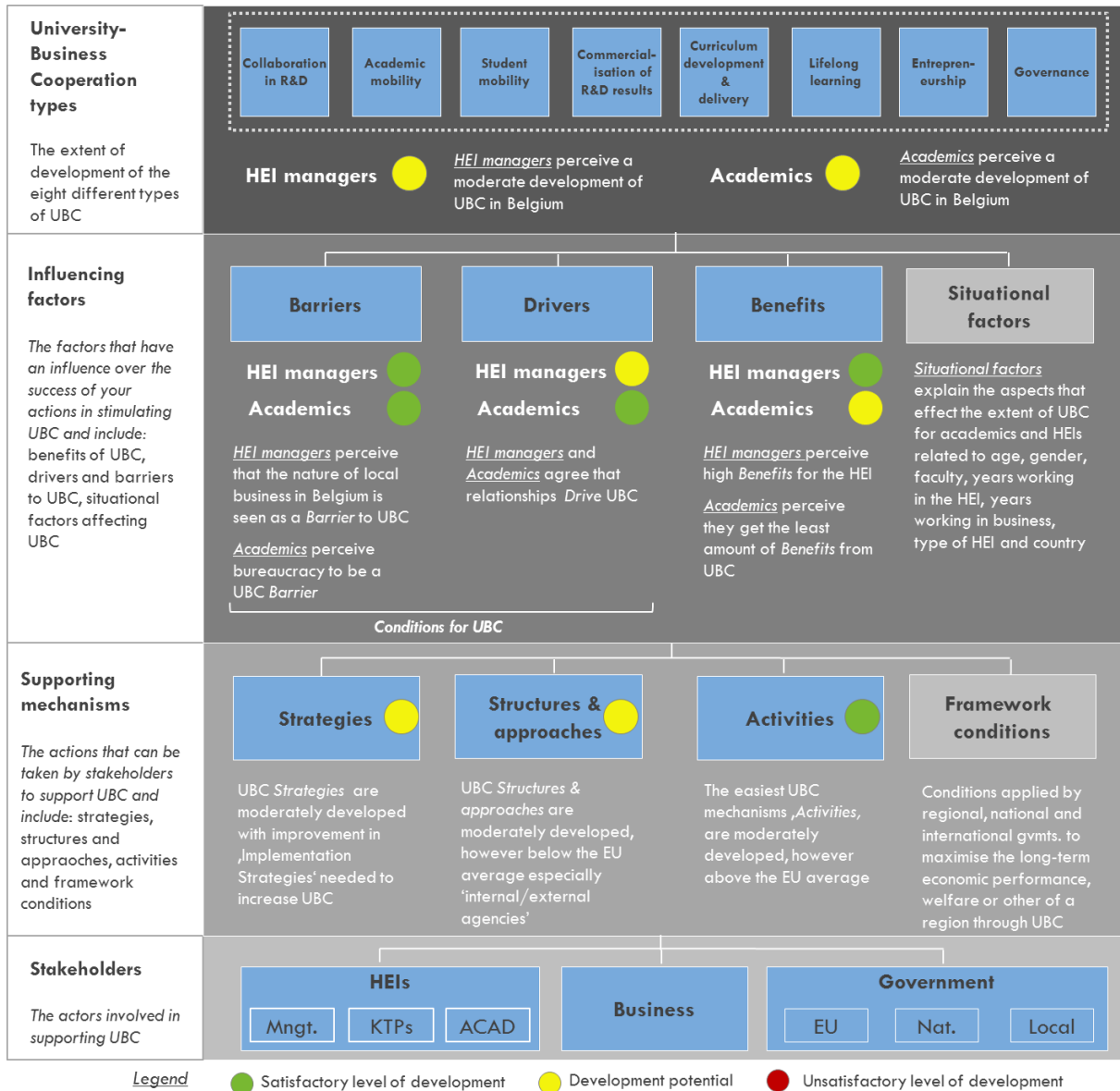
'*Role-based approaches*' to UBC are significantly more developed than '*internal/external agencies dedicated to UBC*' (4.3, well below the European average of 5.3). Alumni networks and the 'practise of recruiting industry professionals into the knowledge transfer area' are UBC *Structures* that are the highest developed as well as being above the EU average. Certain UBC *Structures and approaches* in Belgium are developed to a level well below the EU average including 'career offices within the university' and 'board member or vice rector positions for UBC'. These result contribute to a below average development of UBC *Structures and approaches* in Belgium compared to the EU average.

The least-cost and easiest to implement mechanisms for UBC are *Activities*. In terms of UBC *Activities* Belgium is more developed than the European average. This is especially true for '*externally focused networking, promotional and project Activities*' (the most developed type of *Activities* in Belgium) as is '*internally focused education and workshops focused on students*', whilst '*internal Activities focused on academics*', is the least developed *Activity* and equivalent to the European average.

Summary of Belgium results using the UBC Ecosystem Model

The following diagram provides an overview of the results of the UBC study specifically for Belgium. The results are explained in the *Executive Summary* as well as in greater detail within the report. The diagram

provides areas for immediate focus (short-term) as well as areas for strategic consideration (longer-term) in order to improve UBC in Belgium.



	Development level	Focus	Focus timing
●	Satisfactory level of development	Sustain	Long-term
●	Development potential	Grow	Medium-term
●	Unsatisfactory level of development	Develop	Short-term

Introduction

Background

With the creation of the Europe 2020 programme, 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 functioning relationship between government, business and HEI in order to increase employment, productivity and social cohesion³. 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. UBC helps universities to face the problem of decreasing public funds⁴, helps businesses to gain and maintain their competitive advantage in today's dynamic international markets, contribute to the economic development on regional and national level⁵ as well as meet the demands of the labour market to provide more relevant knowledge and skills and greater job prospects of students^{6,7}. Additionally, there are substantial indirect outcomes of UBC including support in the creation of a knowledge economy⁸, support for local business⁹, creation of jobs¹⁰, stimulation of economic growth and increased living standards whilst reducing hindrances to good living¹¹. 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 exchange¹². 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.

³ European Commission 2011

⁴ Carayol, 2003

⁵ OECD, 2002

⁶ Bozeman and Boardman 2013

⁷ Anseel 2012

⁸ Etzkowitz & Leydesdorff 2000

⁹ Davey et al. 2011

¹⁰ *ibid*

¹¹ Etzkowitz & Leydesdorff, 2000

¹² *ibid*

Objective

The objective of this report is to evaluate the current status of UBC in Belgium 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 European Commission 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:

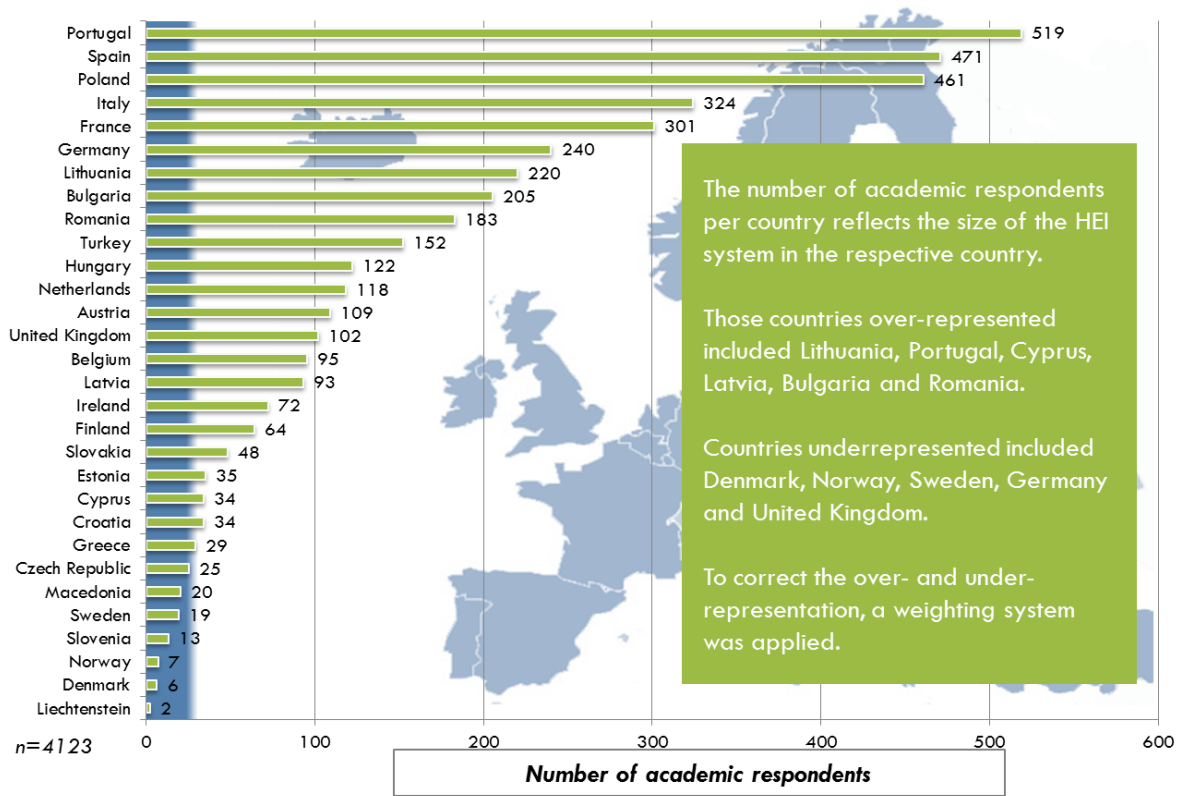
1. **Individual academics** were asked to respond on behalf of themselves.
2. **HEI management** (HEI managers and university professionals working with industry) were asked to respond on behalf of their HEI.

	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

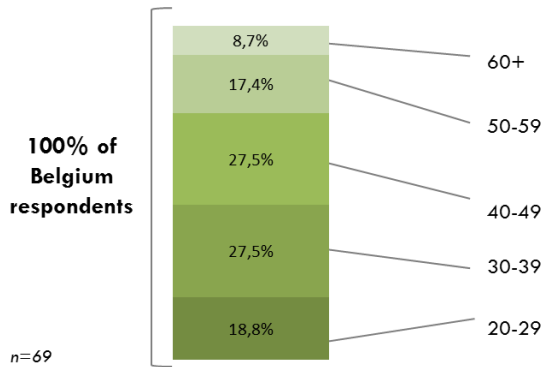
Colour codes have been used throughout the report to identify those results received from the academics (green) and those results received from the HEI (orange).

Respondents (academic)

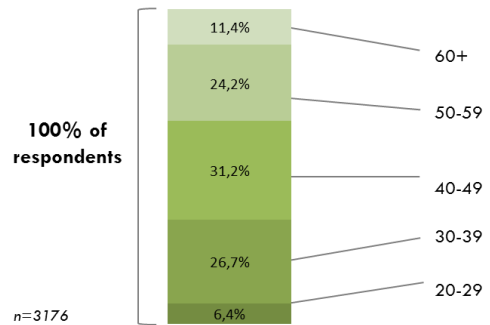
Country



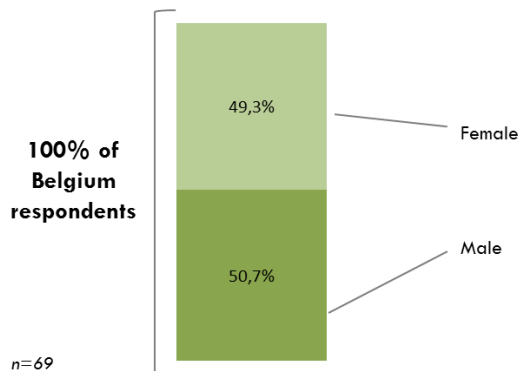
Age of respondents in Belgium



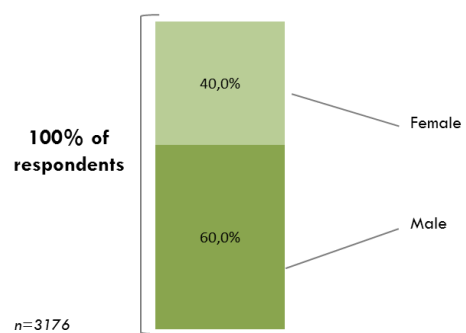
Age of respondents in Europe



Gender of respondents in Belgium

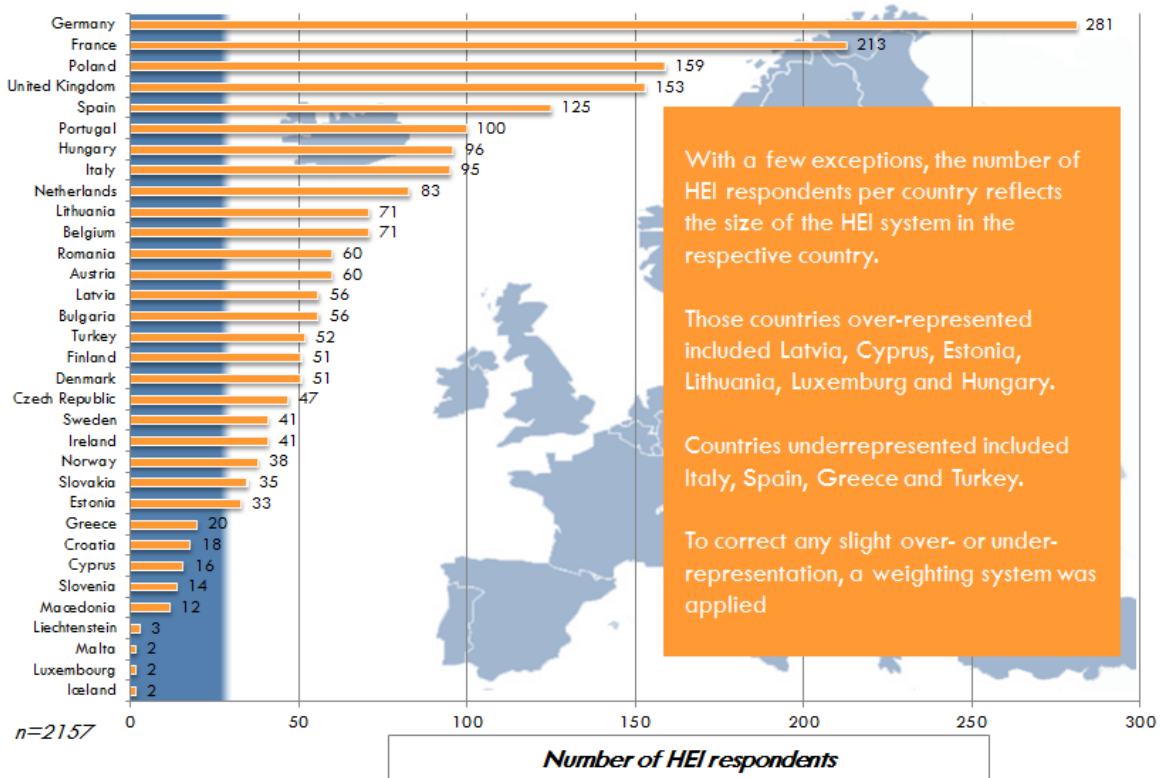


Gender of respondents in Europe

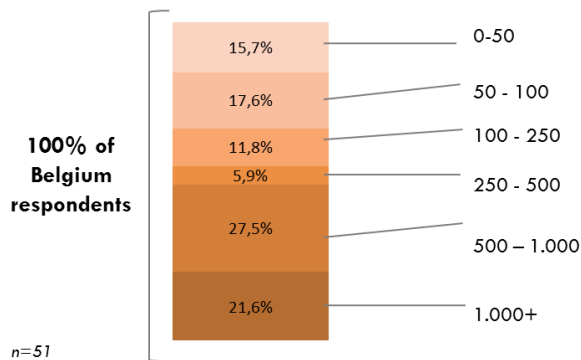


Respondents (HEIs)

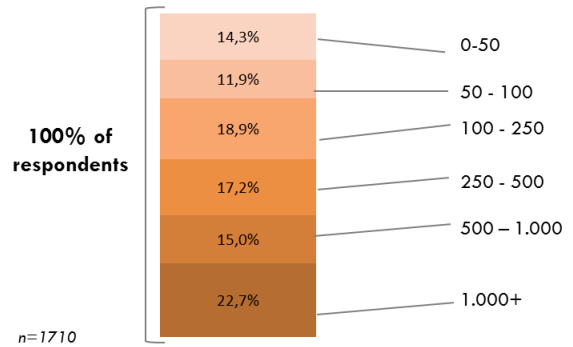
Country



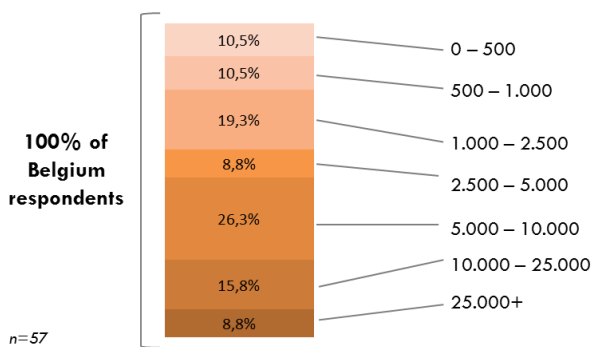
Number of academics per HEI in Belgium



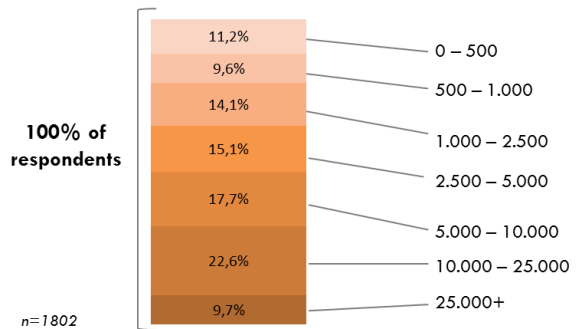
Number of academics per HEI in Europe



Number of students per HEI in Belgium



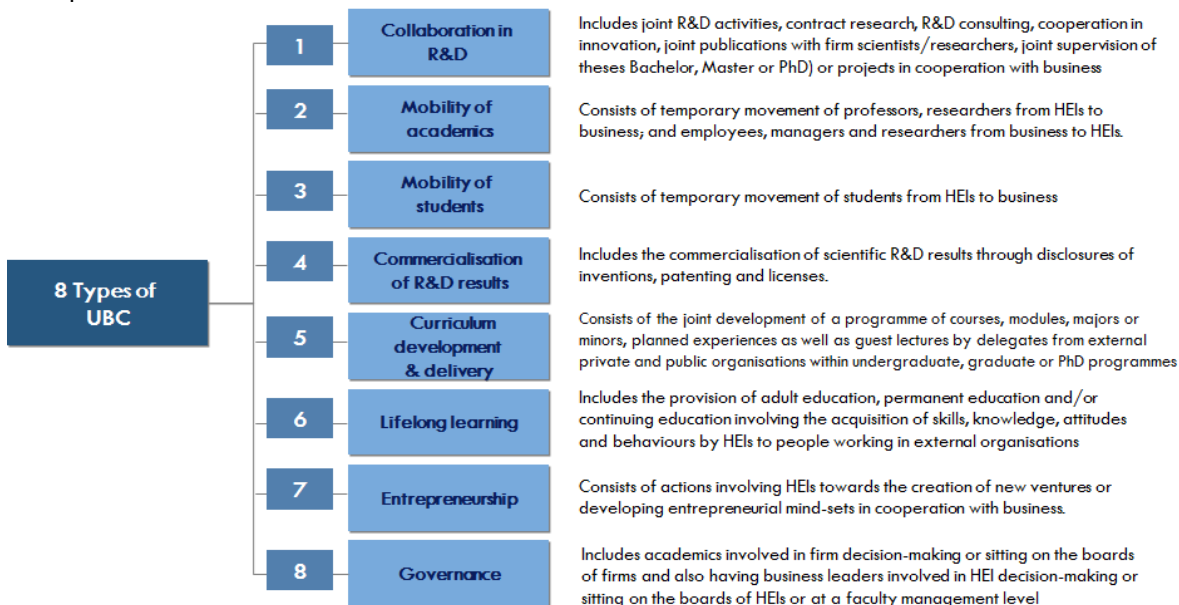
Number of students per HEI in Europe



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 clusters¹³:

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.

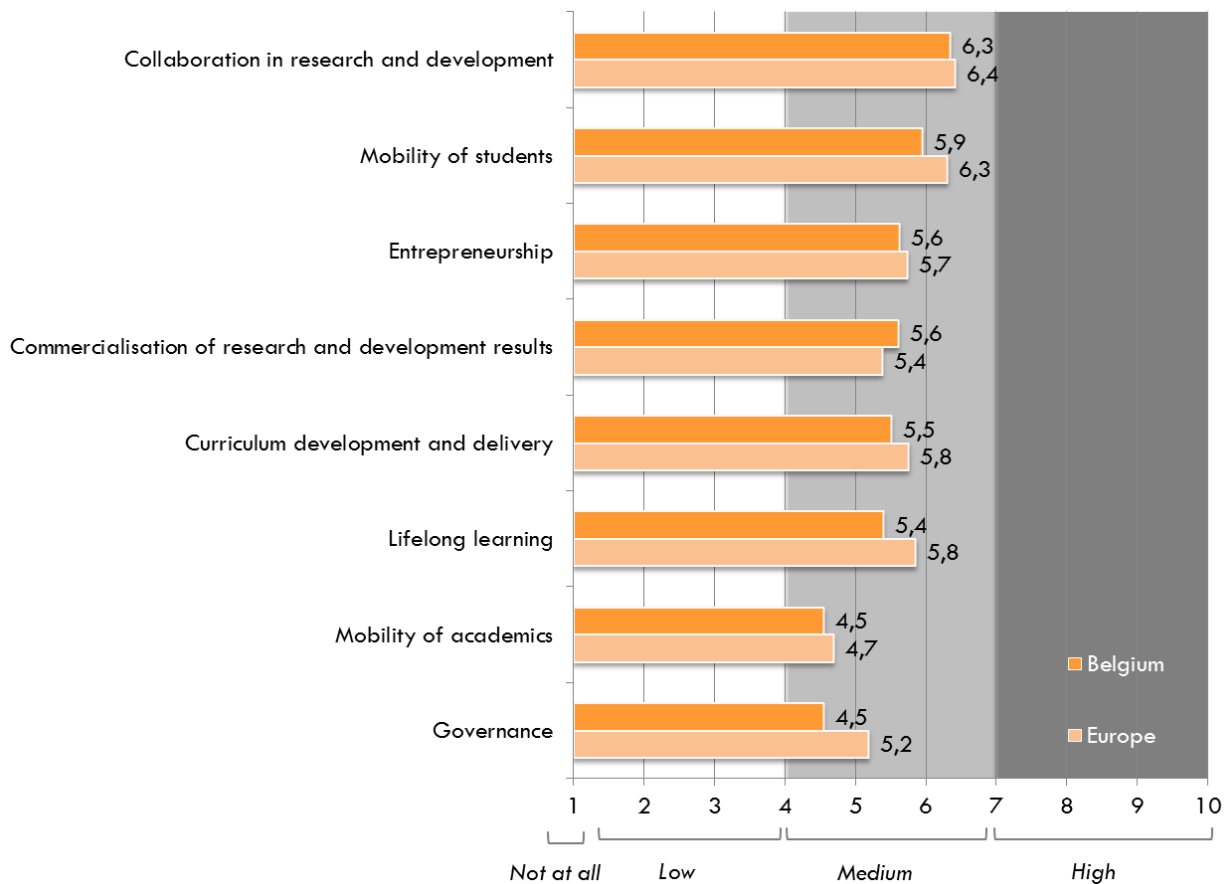
Relationship among cooperation types

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.

¹³ Please note that the Strategic Research Centres (SRCs), organisations that are not specifically seen as HEIs, have not been included in this country study on Belgium. These SRCs, which are public research organisations conducting demand-driven research and UBC activities, would most likely positively influence the results of this study.

Extent of University-Business Cooperation in Belgium

As answered by HEI management



Extent of cooperation in Belgium

There is a small degree of diversity in the development of the different types of UBC in Belgium, with *Collaboration in R&D* (6.3), *Mobility of students* (5.9) and *Entrepreneurship* (5.6) as the most developed types.

Benchmarking Belgium

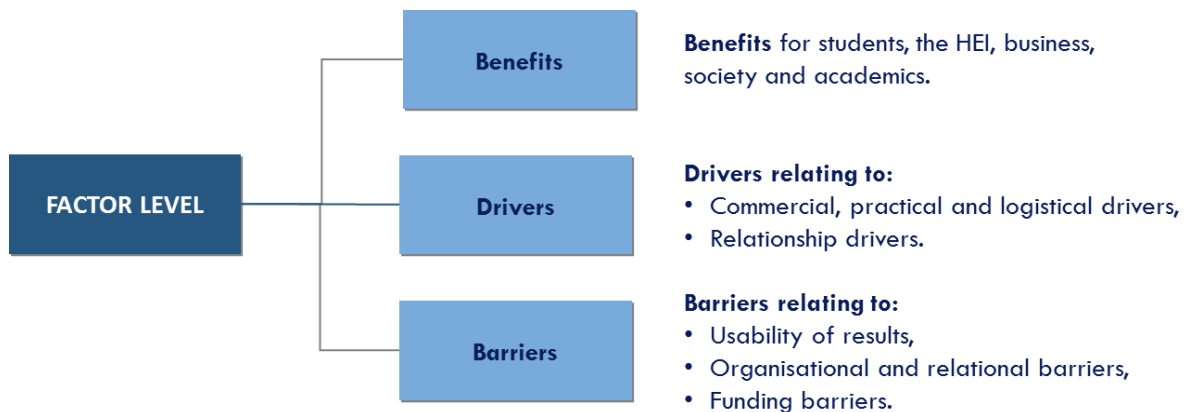
According to the results, Belgian HEI management report the extent of UBC being approximately on the same level as the European average, with a slightly lesser performance in *Governance* and *LLL*.

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

	Belgium	Europe
Highly developed	-	-
Moderately developed	<ol style="list-style-type: none"> 1. Collaboration in R&D 2. Mobility of Students 3. Entrepreneurship 4. Commercialisation of R&D results 5. Curriculum development and delivery 6. Lifelong Learning 7. Mobility of Academics 8. 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

Factors influencing the extent of UBC

The coming section will outline the extent to which a number of factors affect cooperation within business in Belgium. 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 in Belgium

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 Belgium compared to the EU average. The *Barriers* have been factored into 'meta-groups' in order to provide a more strategic understanding.

Barriers (grouped) to cooperation – Belgium v Europe

As answered by academics and HEI management

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.*

Usability of results	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Belgium		Europe	
	ACAD	6.0	ACAD	6.1
HEI	6.2	HEI	6.0	

Funding barriers	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Belgium		Europe	
	ACAD	6.7	ACAD	6.5
HEI	6.7	HEI	6.8	

Relational barriers	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Belgium		Europe	
	ACAD	6.0	ACAD	6.4
HEI	6.2	HEI	6.2	

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

Belgian HEI management and academics assess 'all *Barriers* nearly equal to that of their European colleagues.

Main Barriers to cooperation – Belgium v Europe

As answered by HEI management



Funding Barriers are the biggest Barriers to UBC in Belgium (see graph above)

The most prominent *Barriers* named by the Belgian HEI management are those related to the 'funding *Barriers*' between the HEI and business including 'lack of financial resources of the business' (6.9), 'lack of university funding for UBC' (6.7) and 'lack of external funding for UBC' (6.7). In addition, Belgian HEI management reported 'the limited absorption capacity of SMEs to take on internships or projects' (7.1) and the 'different time horizons between university and business' (6.8) as a key issue.

Lower UBC Barriers are perceived in Belgium than in Europe (see graph above and previous page)

Belgian HEI management assess most *Barriers* as less relevant than the EU average except for 'the limited absorption capacity of SMEs to take on internships or projects' (7.1 compared to 6.6), 'differing time horizons between university and business' (6.8 compared to 6.6), 'the current financial crises' (6.6 compared to 6.4), and 'universities lack awareness of opportunities coming from UBC' (6.5 compared to 6.2). In addition, the fear of knowledge disclosure (6.4 compared to 5.8) seems to be a far higher

Barrier in Belgium in comparison to their European counterparts.

With respect to the less relevant *Barriers* in Belgium it can be stated that 'bureaucracy within or external to the university' (5.7), 'a lack of contact people with scientific knowledge within business' (5.6) and 'differing mode of communication and language between university and business' (5.1) are seen as far less relevant *Barriers* in Belgian UBC compared to European average. Despite this, previous research has shown that HEI management underestimate the size of the bureaucratic *Barriers* to UBC with academics stating this as one of the most prominent factors (Davey *et al.*, 2011). As such this should be considered to be true also in the Belgian UBC environment.

Main Barriers to UBC in Belgium	
1.	The limited absorption capacity of SMEs to take on internships or projects'
2.	Lack of financial resources of the business
3.	Differing time horizons between university and business
4.	Lack of university funding for UBC
5.	Lack of external funding for UBC

Drivers stimulating UBC in Belgium

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 Belgium 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 – Belgium v Europe

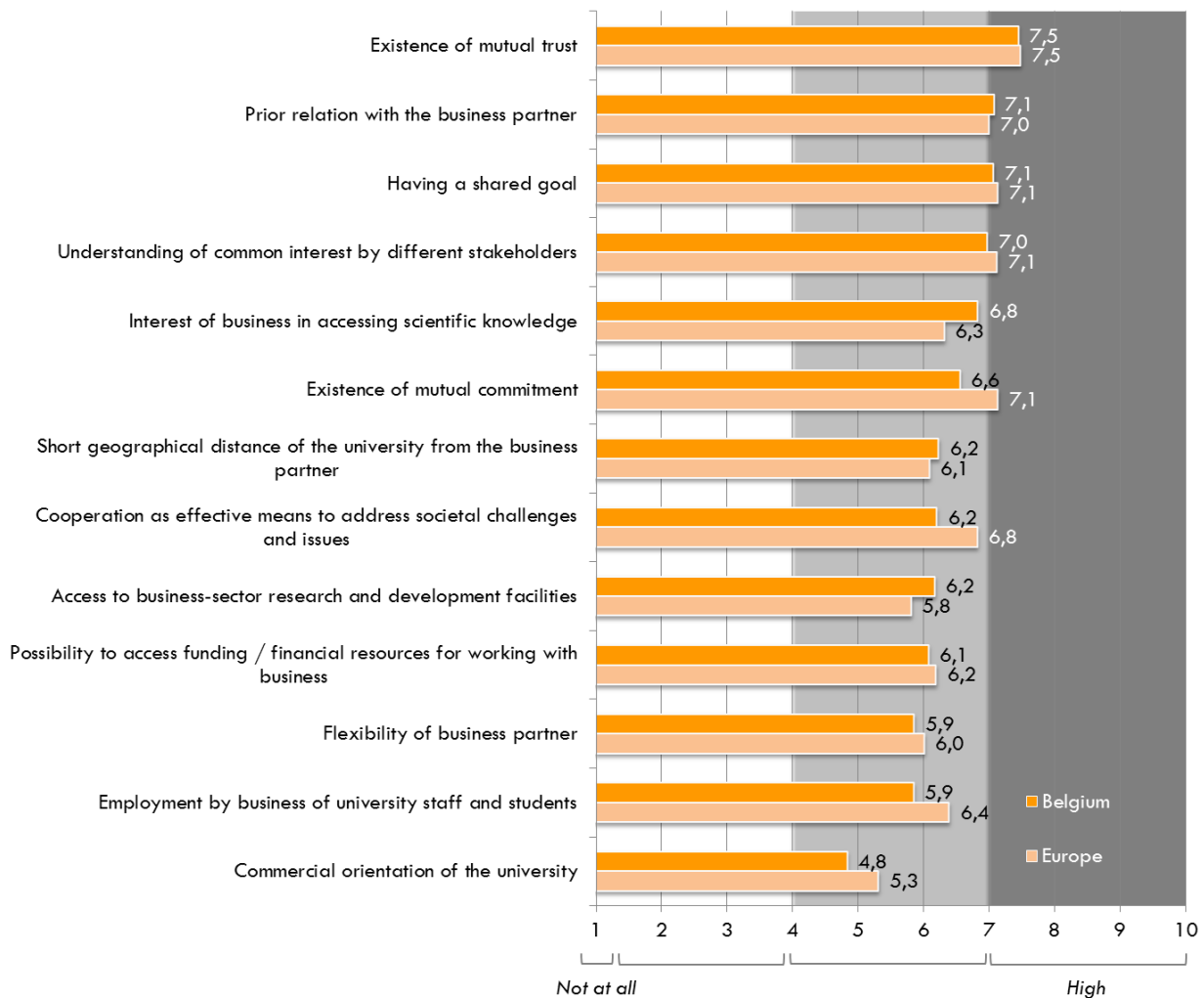
As answered by academics and HEI management

Relationship drivers	Extent of facilitation (1-10)		Extent of facilitation (1-10)	
	Belgium		Europe	
	<ul style="list-style-type: none"> • Existence of mutual trust, • Existence of mutual commitment, • Having a shared goal, • Understanding of common interest by different stakeholders (e.g. universities; business; individuals; students), • Prior relation with the business partner, • Cooperation as effective means to address societal challenges and issues. 	ACAD	6.7	ACAD
	HEI	6.9	HEI	7.0

Business drivers	Extent of facilitation (1-10)		Extent of facilitation (1-10)	
	Belgium		Europe	
	<ul style="list-style-type: none"> • Employment by business of HEI staff and students, • Interest of business in accessing scientific knowledge, • Possibility to access funding / financial resources for working with business, • Short geographical distance of the HEI from the business partner • Flexibility of business partner, • Access to business-sector research and development facilities • Commercial orientation of the HEI. 	ACAD	5.6	ACAD
	HEI	6.0	HEI	6.7

Main Drivers of cooperation – Belgium v Europe

As answered by HEI management



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

The HEI management in Belgium perceive the highest Drivers of UBC to be 'relationship Drivers' such as 'existence of mutual trust' (7.5), 'prior relation with business partner' (7.1), 'having a shared goal' (7.1) and 'understanding of common interest by different stakeholders' (7.0). This last driver also aligns with the governmental funding for HEIs to hire Industry Research Fund (IRF) managers. 'Relationship Drivers', most 'business Drivers' are seen as substantially less important. This is especially so for the 'business Drivers' of 'commercial orientation of the university' (4.8) and 'employment by business of university staff and students' (5.9). Therefore it can be said that both HEI management and academics in Belgium agree that 'relationship Drivers' are greater facilitators for UBC than 'business Drivers'. This reflects the people nature of cooperation.

Belgian respondents see the business Drivers of UBC different to EU respondents (see table from previous page)

The 'business Drivers' of UBC are assessed far lower by the HEI management in Belgium than their European colleagues. The most significant difference lies in the 'commercial orientation of the university' (4.8 v 5.3) and in 'employment by business of university staff and students' (5.9 v 6.4). Even whilst the state funding of an HEI relates directly to their UBC revenues, the influence on the total budget is still slim, explaining the low development of 'commercial orientation of the university'

Main Drivers of UBC in Belgium

1. Existence of mutual trust
2. Prior relation with business partner
3. Having a shared goal
4. Understanding of common interest by different stakeholders
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 Belgium compared to the EU average. The Benefits have been factored into 'meta-groups' in order to provide a more strategic understanding of UBC Barriers.

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.

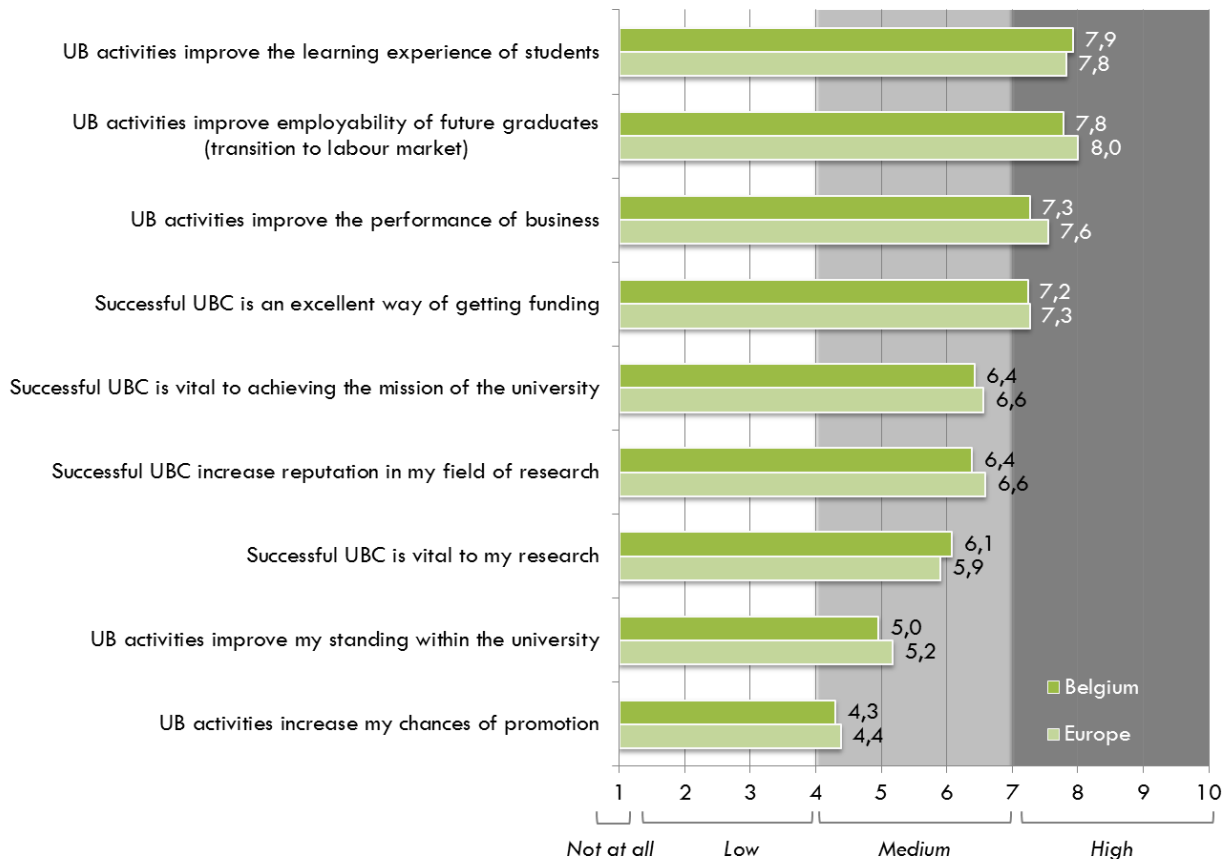
Benefits (grouped) from cooperation – Belgium v Europe

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)	
	Belgium		Europe	
	ACAD	7.8	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)	
	Belgium		Europe	
	ACAD	7.3	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)	
	Belgium		Europe	
	ACAD	6.4	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)	
	Belgium		Europe	
	ACAD	5.9	ACAD	5.9

Benefits from cooperation – Belgium v Europe

As answered by academics



Students get the most Benefit from UBC say academics

Academics in Belgium nominate that the greatest Benefits from UBC go to students ('UB Activities improve the learning experience of students' and 'UB Activities improve employability of future graduates'), followed by Benefits for business ('UB Activities improve the performance of business') as well as the university ('successful UB cooperation is vital to achieving the mission of the university') and finally rate self-Benefit the lowest.

Belgian academics perceive low self-Benefit from UBC Activities (see graph above)

Whilst academics acknowledge that UBC is an excellent way of getting funding (7.1), they are much more negative in respect to the intangible Benefits of UBC (e.g. increase of reputation in their field of research, improvement of their standing within the university, increase the chances of promotion). However as Van Looy et al. (2006) indicate in their study, academics engaging in UBC publish more than those that don't, this effect might however not be observed by academics.

These results are in line with the grouped results (see previous page). Compared to these relatively high Benefits for all other stakeholders (7.8, 7.3, 6.4),

academics perceive their own Benefits from UBC much lower (5.9).

Belgian academics perceive lower Benefits from UBC than in Europe (see graph above)

In comparison with the EU average, Belgian academics see most Benefits slightly less positive. With the only two exceptions being 'UB Activities improve the learning experience of students' (7.9 compared to 7.8) and 'successful UBC is vital to my research' (6.1 compared to 5.9).

Overall, Belgian academics perceive the Benefits from UBC to be of a bit lower extent for students and business and HEIs, and to be of an equal extent for themselves

Main Benefits of UBC identified by Belgian academics

1. UB Activities improve the learning experience of students
2. UB Activities improve employability of future graduates
3. UB Activities improve the performance of business
4. Successful UB cooperation is an excellent way of getting funding
5. Successful UB cooperation is vital to achieving the mission of the university

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 Belgium compared to the EU average. The Benefits have been factored into 'meta-groups' to provide a more strategic understanding.

Benefits (grouped) from cooperation – Belgium v 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.

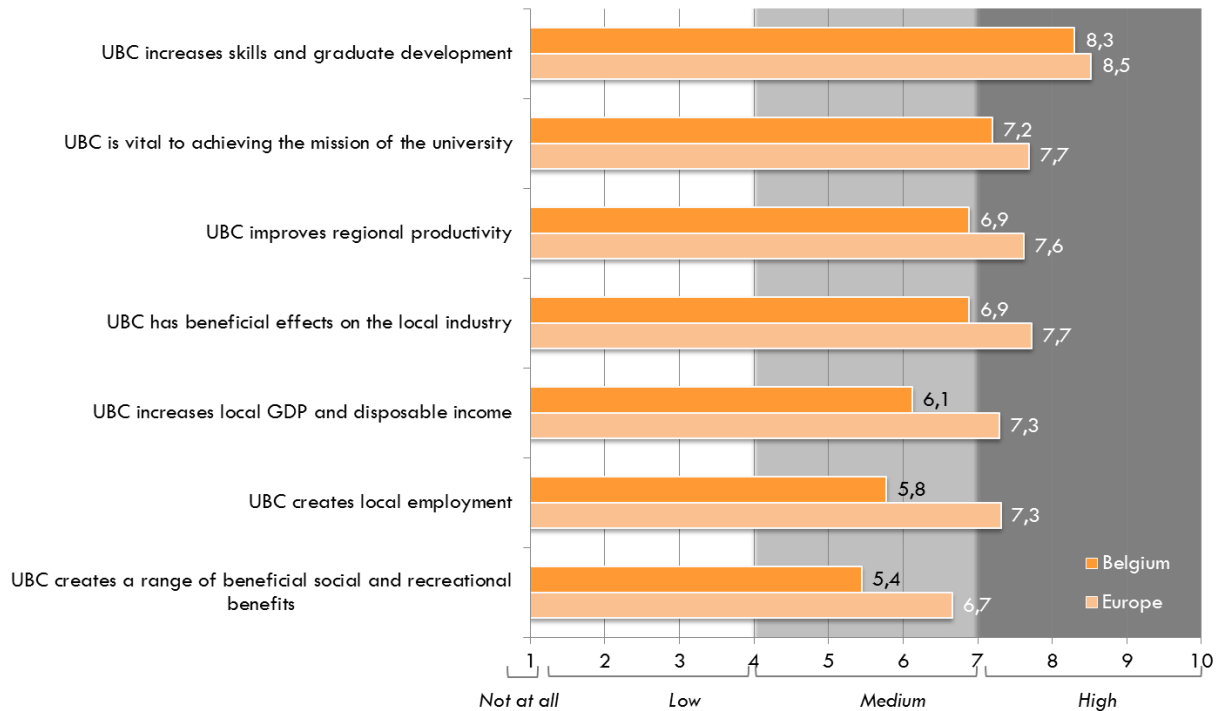
Benefits for the HEI	Extent of importance (1-10)		Extent of importance (1-10)	
	Belgium		Europe	
	HEI	7.2	HEI	7.7
<ul style="list-style-type: none"> • UBC is vital to achieving the mission of the HEI. 				

Benefits for students	Extent of importance (1-10)		Extent of importance (1-10)	
	Belgium		Europe	
	HEI	8.3	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)	
	Belgium		Europe	
	HEI	6.2	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 – Belgium v Europe

As answered by HEI management



The HEI and students get the most Benefit from UBC say HEIs (see table previous page and graph above)

HEI management in Belgium perceive most Benefits from UBC to be of a medium extent, with the Benefits for 'students' ('UBC increases skills and graduates development'), and 'HEIs' ('UBC is vital to achieving the mission of the HEI'), being perceived to receive a high Benefit from UBC.

Lower Benefit perceived from UBC for students, business and society by Belgian HEI management than in Europe (see table previous page and graph above)

Comparing the results to the European average it can be stated that Belgian HEI management see lower Benefits for most categories. However, mainly for business and society. With 'UBC improves regional productivity' (6.9 compared to 7.6), 'UBC has beneficial effects on the local industry' (6.9 compared to 7.7), 'UBC increases local GDP and disposable income' (6.1 compared to 7.3), 'UBC creates local

employment' (5.8 compared to 7.3) and 'UBC creates a range of beneficial social and recreational Benefits' (5.4 compared to 6.7). These large gaps indicate that with respect to society and business, Belgian HEI management are far more negative than the European average (6.2 compared to 7.3).

Main Benefits of UBC identified by Belgian HEI management

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

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



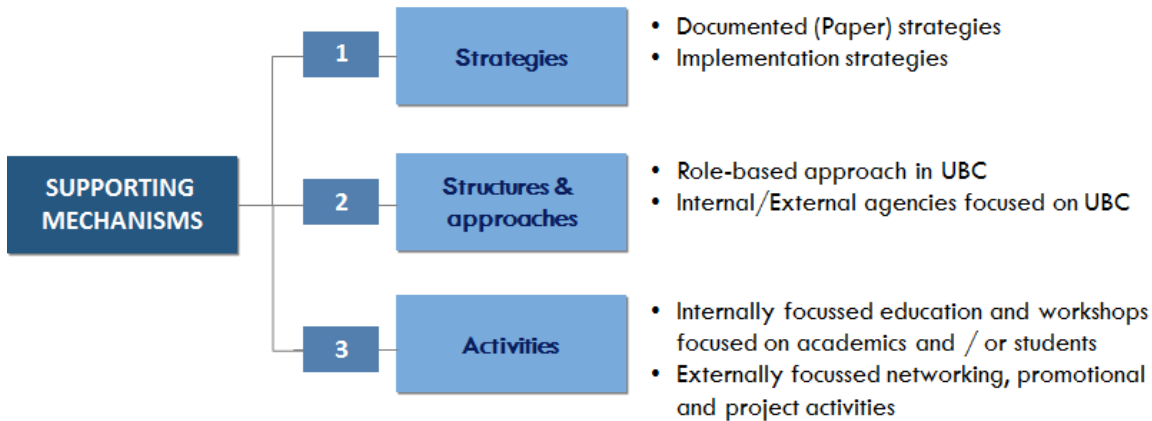
...your university!

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 Belgium. 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 in Belgium

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. Additionally, some HEIs are grouping

their efforts in joint initiatives to increase their overall level of UBC engagement¹⁴.

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) – Belgium v Europe

As answered by HEI management

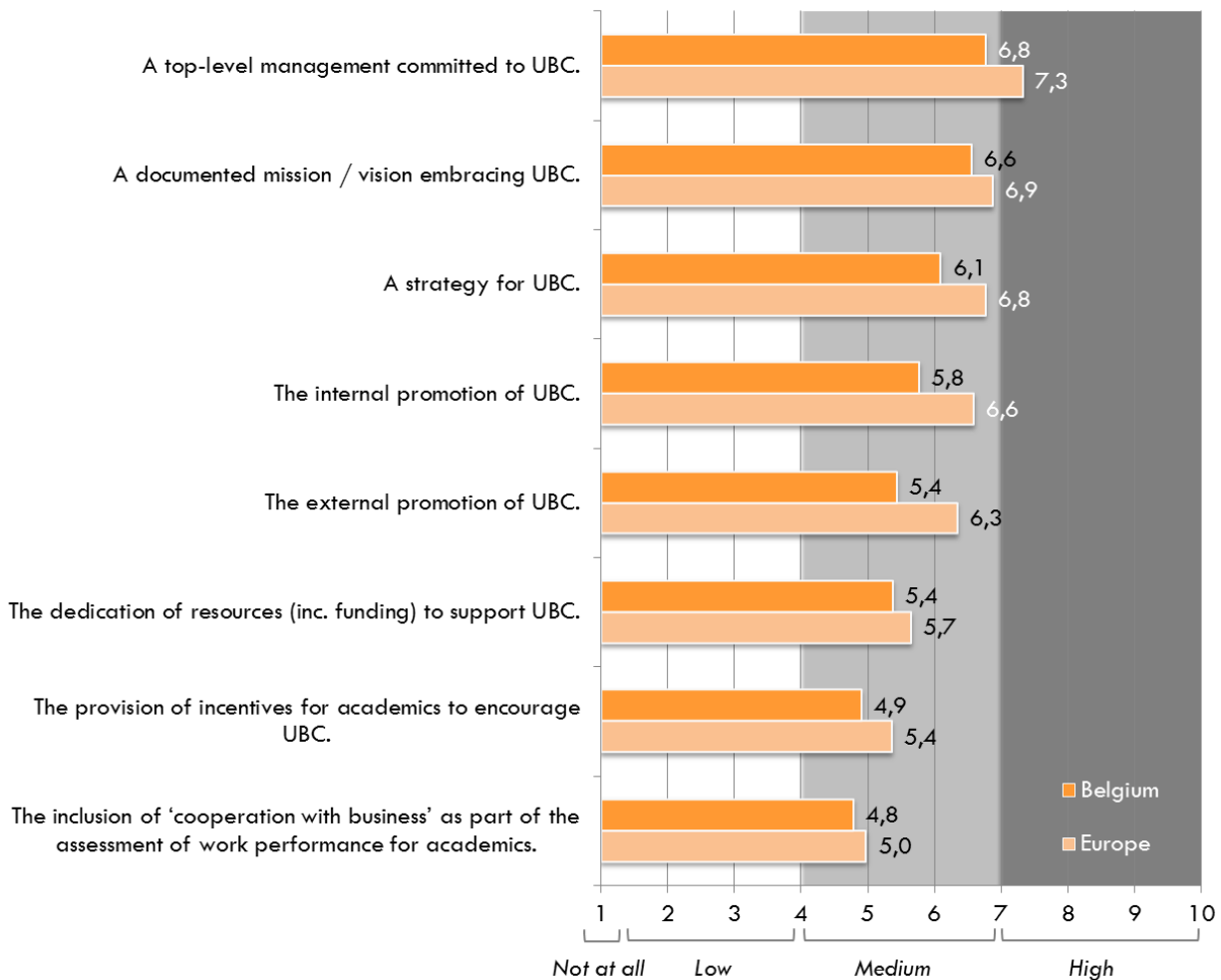
Documented (Paper) strategies	Extent of development (1-10)		Extent of development (1-10)	
	Belgium		Europe	
	HEI	6.1	HEI	6.8
<ul style="list-style-type: none"> • A top-level management committed to University-Business cooperation, • A documented mission / vision embracing University-Business cooperation, • A strategy for University-Business cooperation, • The internal promotion of University-Business cooperation., • The external promotion of University-Business cooperation. 				

Implementation and motivation strategies	Extent of development (1-10)		Extent of development (1-10)	
	Belgium		Europe	
	HEI	5.1	HEI	5.4
<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. 				

¹⁴ The TTO Flanders (<http://www.ttoflanders.be>) groups the technology transfer offices of the five universities in Flanders (the northern state of Belgium)

Development of UBC Strategies – Belgium v Europe

As answered by HEI management



Documented (paper) Strategies are the most developed Strategies in Belgium (see graph above)

The most developed UBC Strategies in Belgium, as reported by Belgian HEI management, are 'a top-level management committed to UBC' (6.8), 'a documented mission / vision embracing UBC' (6.6) and 'a strategy for UBC' (6.1). On the other extreme, 'the inclusion of cooperation with business as part of the assessment of work performance for academics' (4.8), 'the provision of incentives for academics to encourage UBC' (4.9) and 'the dedication of resources, incl. funding, to support UBC' (5.4) are only developed to a lower degree (compared to other Strategies).

Strategies are slightly lower developed in Belgium as in Europe (see graph above)

When compared to the European average, Belgium shows a slightly lower extend of implementation of UBC Strategies, with most items showing a lower response. The largest gap is found in the internal and external promotion of UBC and a Strategy for UBC,

where the European HEI management performs slightly better.

On a factored (grouped) level, 'documented Strategies' are considerably lower developed in Belgium than in Europe.

UBC Strategies in Belgium	
Moderately developed	<ol style="list-style-type: none"> 1. A top-level management committed to UBC 2. A documented mission / vision embracing UBC 3. A strategy for UBC 4. The internal promotion of UBC 5. The external promotion of UBC 6. The dedication of resources (incl. funding) to support UBC 7. The provision of incentives for academics to encourage UBC 8. The inclusion of 'cooperation with business' as part of the assessment of work performance for academics

Structures and approaches for UBC in Belgium

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) – Belgium v Europe

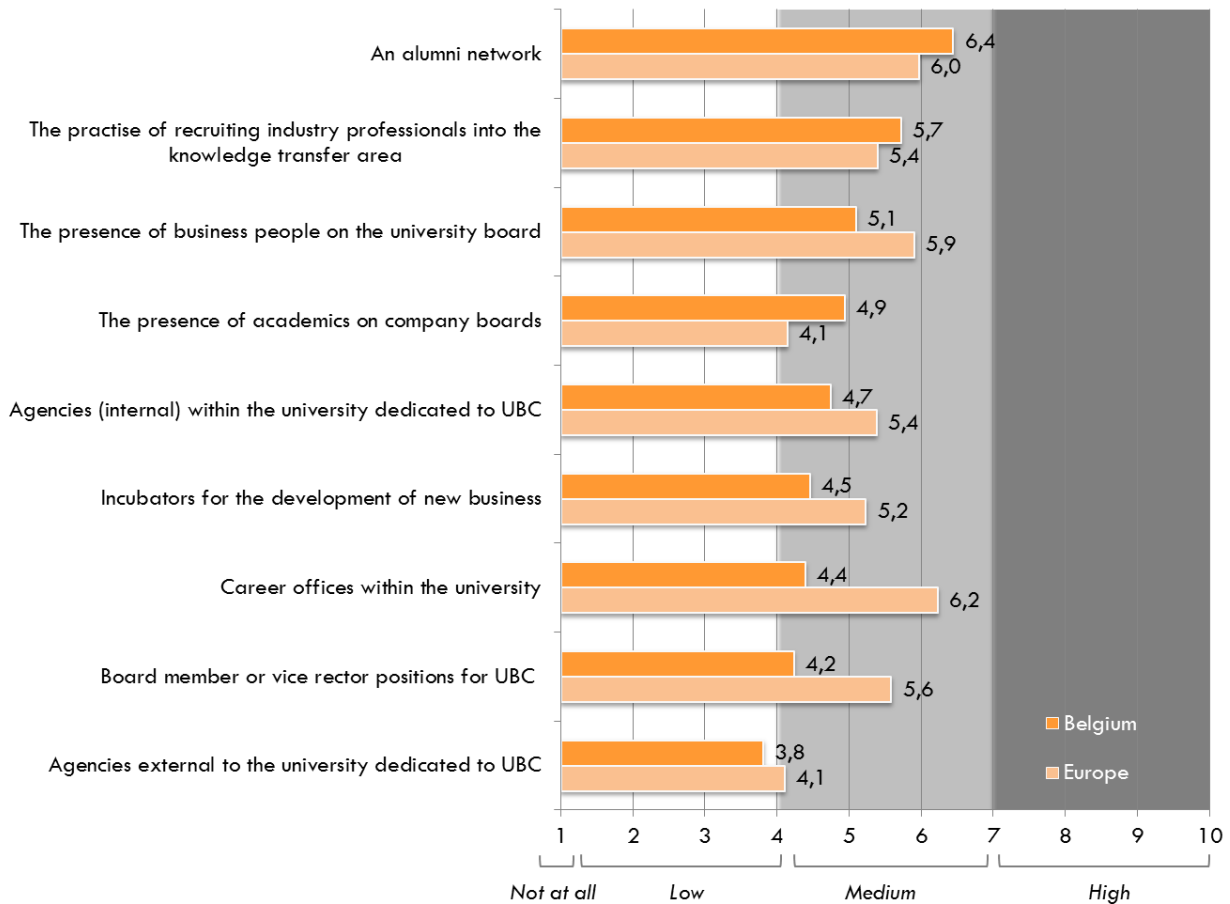
As answered by HEI management

Roles-based approaches in UBC	Extent of development (1-10)		Extent of development (1-10)	
	Belgium		Europe	
	HEI	5.3	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)	
	Belgium		Europe	
	HEI	4.3	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. 				

Development of UBC Structures and approaches –Belgium v Europe

As answered by HEI management



The appointment of personnel is the most developed approach in Belgium (see table previous page)

The extent of development of the *Structures and approaches* for UBC in Belgium shows that 'role-based approaches in UBC' are far more developed than 'internal/external agencies focused on UBC' (5.3 compared to 4.3). This is supported by the result shown in the graph above where the 'role-based approach' is evident through the development of 'alumni networks' (6.4), 'the practise of recruiting industry professionals into the knowledge transfer area' (5.7) and 'the presence of business people on the HEI board' (5.1).

A lower extent of development of Structures and approaches to Europe

With only 'alumni networks', 'the practise of recruiting industry professionals into the knowledge transfer area' and 'the presence of academics on company boards' (6.4 compared to 6.0, 5.7 compared to 5.4 and 4.9 compared to 4.1) being of a higher extent of development in Belgium compared to the European average. In general, the extent of development of the *Structures and approaches* in Belgium clearly lags behind their European counterparts, with the largest differentiation being in the areas of 'career offices within the university' (4.4 compared to 6.2) and

'board member or vice rector positions for UBC' (4.2 compared to 5.6). However also 'the presence of business people on the university board' and 'incubators for the development of new businesses' show clear signs for improvement. With the latter already being stimulated by a recently governmental incentive scheme (Subsidies for incubators: Advisory report 181).

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

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*

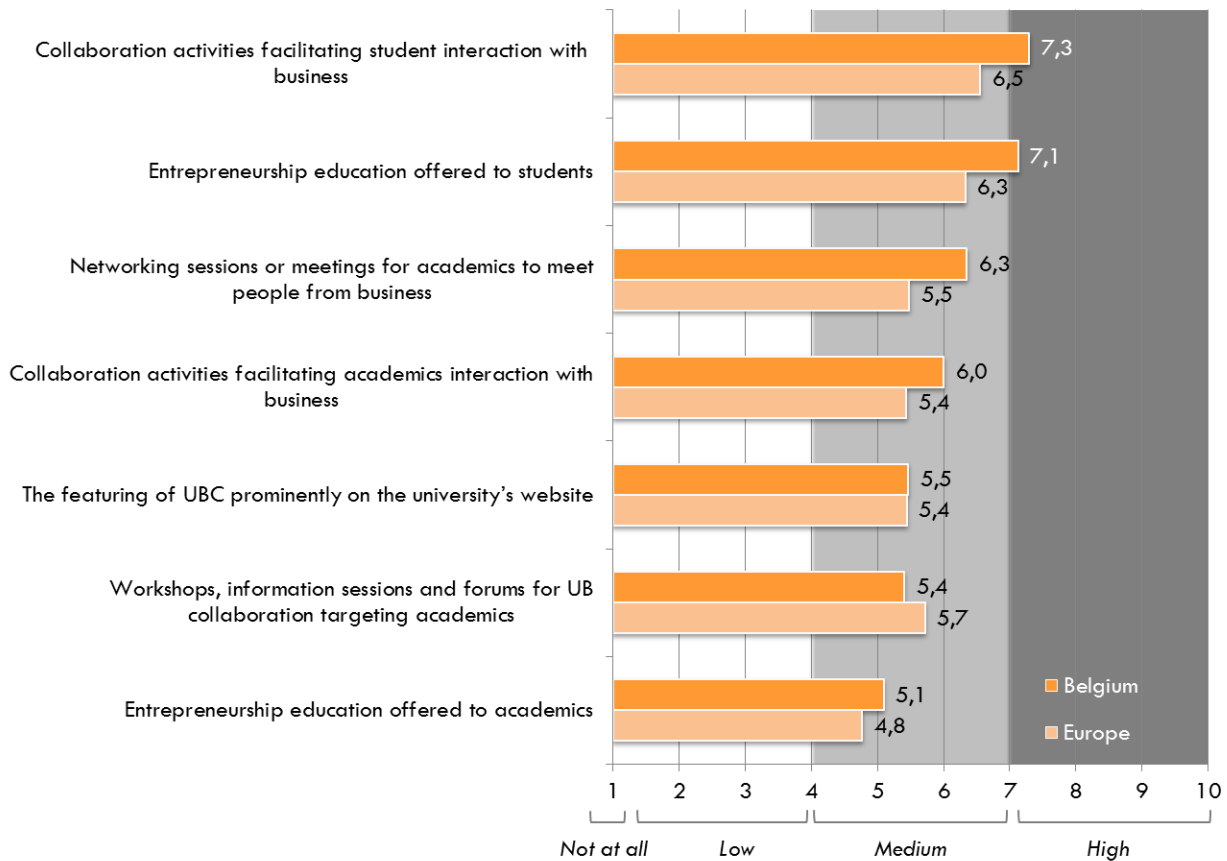
Development of UBC operational Activities (grouped) – Belgium v Europe

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)
<ul style="list-style-type: none"> • Workshops, information sessions and forums for University-Business collaboration targeting academics, • Entrepreneurship education offered to academics. 	Belgium	Europe
	HEI	5.3
	HEI	5.3
Internally focused education and workshops focused on <u>students</u>	Extent of development (1-10)	Extent of development (1-10)
<ul style="list-style-type: none"> • Entrepreneurship education offered to students. 	Belgium	Europe
	HEI	7.1
	HEI	6.3
Externally focused networking, promotional and project activities	Extent of development (1-10)	Extent of development (1-10)
<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. 	Belgium	Europe
	HEI	6.2
	HEI	5.7

Development of UBC operational Activities – Belgium v Europe

As answered by HEI management



Students are the focus of UBC Activities in Belgium (see graph this page)

Regarding 'collaboration Activities facilitating student interaction with business' Belgium is very well advanced, and in comparison to the European average (7.3 compared to 6.5) While 'entrepreneurship education offered to students' (7.1 compared to 6.3) is also well developed¹⁵, 'entrepreneurship education offered to academics' is found to be the least developed operational Activities measured (5.1). In addition, 'featuring UBC prominently on the university website' (5.5) and 'workshops, information sessions and forums for UBC collaboration targeting academics' (5.4) are not that well developed. Recently, however, HEIs and external agencies are hosting more workshops and information for sessions for academics, addressing the 'do's and don'ts' of UBC.

A high extent of development of UBC Activities compared to Europe (see table previous page)

On a factored (grouped) level, it can be summarised that Belgium is slightly more developed than the European average with respect to 'externally focused

networking, promotional and project Activities' (6.2 compared to 5.7) as well as 'internally focused education and workshops focused on students' (7.1 compared to 6.3). With respect to internal Activities focused on academics, however, Belgium performs on an equal level compared to the European average (5.3 compared to 5.3).

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

¹⁵ Several Belgian HEIs have even installed a specific 'status' as student-entrepreneur, which allows students to more flexibly organise their classes and exams whilst simultaneously developing their own business.

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 and Arno Meerman

Model validation partners

Science-to-Business Marketing Research Centre, UIIN, aprimo 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

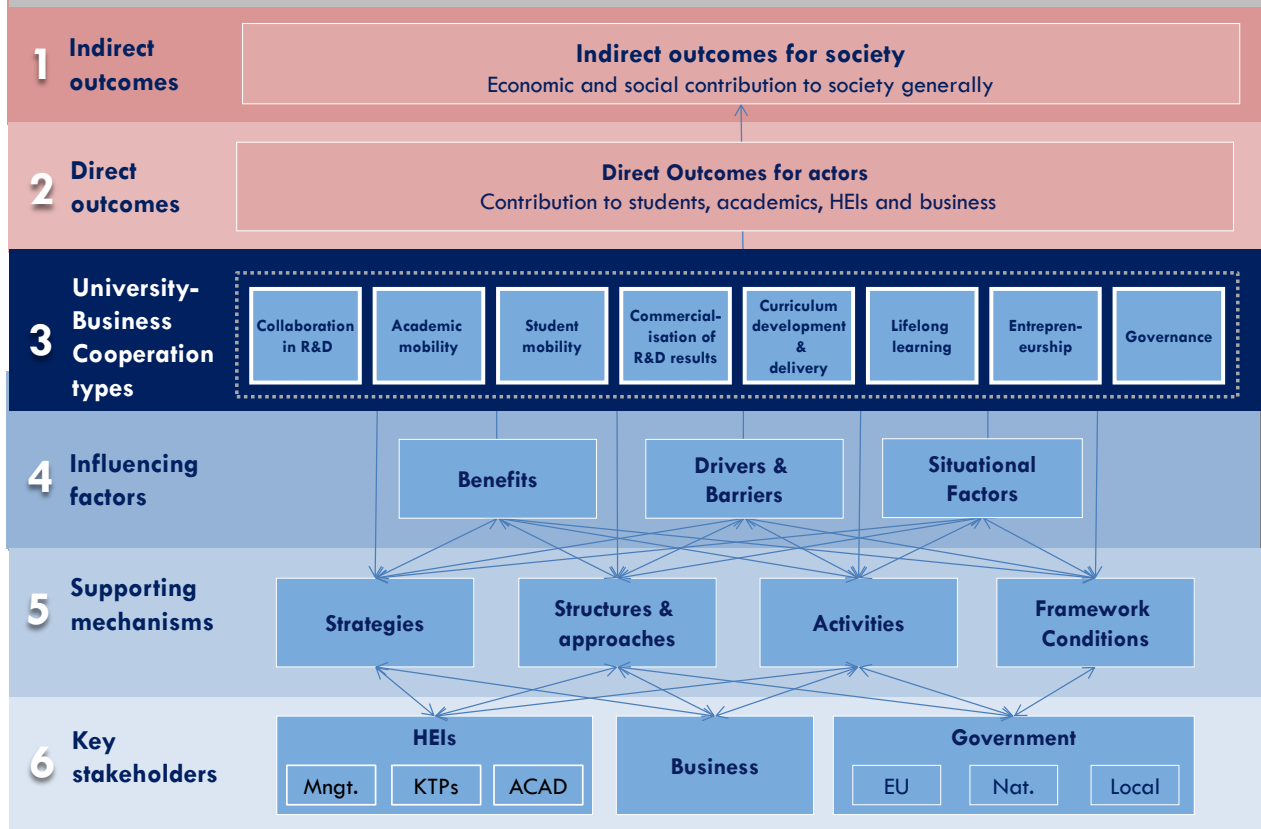
Are you...?

- ...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.

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