

The State of University-Business Cooperation in Netherlands

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
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

University-business cooperation in the Netherlands is at the European average (however there is an ‘elephant in the room’)

Similar to the UK, the Netherlands has a focus of university-business cooperation (UBC) in *Collaboration in research and development (R&D)*, *Mobility of students* as well as *Entrepreneurship*. The greatest *barriers* to UBC in the Netherlands are *funding barriers* whilst the *drivers* of UBC are relationships. Dutch academics see low personal *benefits* from UBC, however in contrast, higher education institution (HEI) management perceive high *benefits* for the HEI from UBC. Furthermore, there is a focus on *role-base structures* such as ‘alumni’ and the ‘practise of recruiting industry professionals’. Nevertheless there is an ‘elephant in the room’: there is a substantial difference in the extent of UBC between traditional universities and universities of applied sciences, in nearly all types of collaboration.

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 the Netherlands (forming the basis for this report), 201 responses from academics (118) and HEI management (83) were received. The study measured the perceptions of these two groups in respect to their own cooperation efforts and those of their HEI respectively.

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

The most developed types of UBC in Netherlands are: (1) *Collaboration in research and development (R&D)*, (2) *Mobility of students*, and (3) *Entrepreneurship* with the least developed type being: *Mobility of academics*. In respect to the European average, Dutch HEI management assess that they perform at about same level as the European average, with a slightly better performance in *Entrepreneurship* but with most UBC types in the Netherlands about the same or slightly lagging behind their European neighbours.

Barriers to UBC are perceived to be lower in the Netherlands however financing UBC is perceived as a problem

The primary barriers to UBC in the Netherlands are: (1) ‘lack of external funding for UBC’, (2) ‘differing time horizons between HEI and business’ and (3) ‘lack of financial resources of the business’ which shows that financing UBC is indeed a *barrier* to UBC in the Netherlands.

However, compared to the European average, all types of *barriers* including *relational barriers*, *business barriers* and *funding barriers* are perceived by Dutch HEI managers and academics to be lesser *barriers* to UBC than by their European counterparts. As with the European results, academics primarily perceive the UBC *barriers* similarly to the HEI managers except for: funding and bureaucracy. HEI managers perceive *funding barriers* to be considerably higher than academics, and academics perceive ‘bureaucracy within or external to the university’ to be substantially higher than HEI managers. It would seem logical that reduction of bureaucracy in Dutch HEIs would allow greater levels of UBC.

Relationships drive cooperation in the Netherlands

Dutch HEI managers and academics alike name *relationship drivers* as the primary drivers of UBC. As in Europe generally, relationships drivers such as (1) ‘existence of mutual trust’, (2) ‘existence of mutual commitment’ and (3) ‘understanding of common interest’ were nominated as the biggest *drivers* of UBC. This suggests that greater effort to bring academics together with business to develop a solid relationship could be a focus for further improvement of cooperation. Furthermore, both Dutch academics and HEI managers also perceive a similar level of UBC *drivers*, and perceive higher *drivers* than their European counterparts.

Combining barriers and drivers, both HEI management and academics agree that the Netherlands has one of the most favourable environments in Europe for UBC.

Academics perceive lower personal benefits from UBC

Dutch academics perceive the primary winners from UBC to be: (1) students, (2) business (though less than the EU average), (3) *benefits* to the HEI (though more 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 (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. HEI managers state that (1) students and (2) HEIs (both 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) get a less, but moderately-high, amount of *benefit*.

UBC *supporting mechanisms* are developed to a similar level to the EU average except role-based UBC approaches

UBC '*strategies*' are well developed in the Netherlands especially *documented strategies* such as 'having a documented vision/mission embracing UBC', and reassuringly, Dutch academics also perceive the same results. That said, and despite being about the EU average, there is still some room for improvement in respect to *implementation strategies* especially in 'providing incentives to academics for UBC' and 'including UBC in the assessment of academics work performance'.

Role-based approaches to UBC are significantly more developed than *internal/External agencies dedicated to UBC* and are more developed in Dutch HEIs than in Europe. 'Alumni networks' and the 'practise of recruiting industry professionals into the knowledge transfer area' are the highest developed UBC '*structures*' as well as being significantly above the EU average. The remainder of the *structures* are developed to approximately the same level as the EU average.

In terms of UBC '*activities*', the Netherlands is slightly more developed than the European average with respect to 'externally focused networking, promotional and project *activities*' as is 'internally-focused education and workshops focused on students' however 'internal *activities* focused on academics', lags a bit behind the European average.

The elephant in the room

There is however a (significant) 'elephant in the room' in respect to UBC in the Netherlands. It is commonly recognised in the Netherlands that there is a difference between universities and universities of applied sciences, more so than perhaps any other country in the world, and so it is with UBC where we barely see any consistency between the two.

Dutch universities are perceived by their HEI managers to have a higher development of UBC types than universities of applied sciences for all types expect *Curriculum development and delivery*. Furthermore, HEI managers perceive a greater amount of *barriers*, however also a higher amount of *drivers* for UBC than those from applied sciences universities. UBC *strategies* and *structures and approaches* (especially) are more developed in universities, however, UBC *activities* are more developed in applied sciences universities, requiring less financial resources and a shorter-term commitment.

Introduction

Background

With the creation of the Europe 2020, the EU's 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 HEIs in order to increase employment, productivity and social cohesion¹. If fostering UBC is understood as interactions between higher education institutions and business 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 funds² help businesses to gain and maintain their competitive advantage in today's dynamic international markets, contribute to the economic development on regional and national level³ as well as meet the demands of the labour market to provide more relevant knowledge and skills and greater job prospects of students⁴. Additionally, there are substantial indirect outcomes of UBC including support in the creation of a knowledge economy⁵, support for local business⁶, creation of jobs⁷, stimulation of economic growth and increased living standards whilst reducing hindrances to good living⁸. 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 exchange⁹. 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 'Academic mobility' with business 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 business and the *benefits* for the students have been increasingly recognised.

¹ European Commission 2011

² Carayol, 2003

³ OECD, 2002

⁴ Bozeman and Boardman 2013

⁵ Etzkowitz & Leydesdorff 2000

⁶ Davey et al. 2011

⁷ *ibid*

⁸ Etzkowitz & Leydesdorff, 2000

⁹ *ibid*

Objective

The objective of this report is to evaluate the current status of UBC in the Netherlands 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 (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:

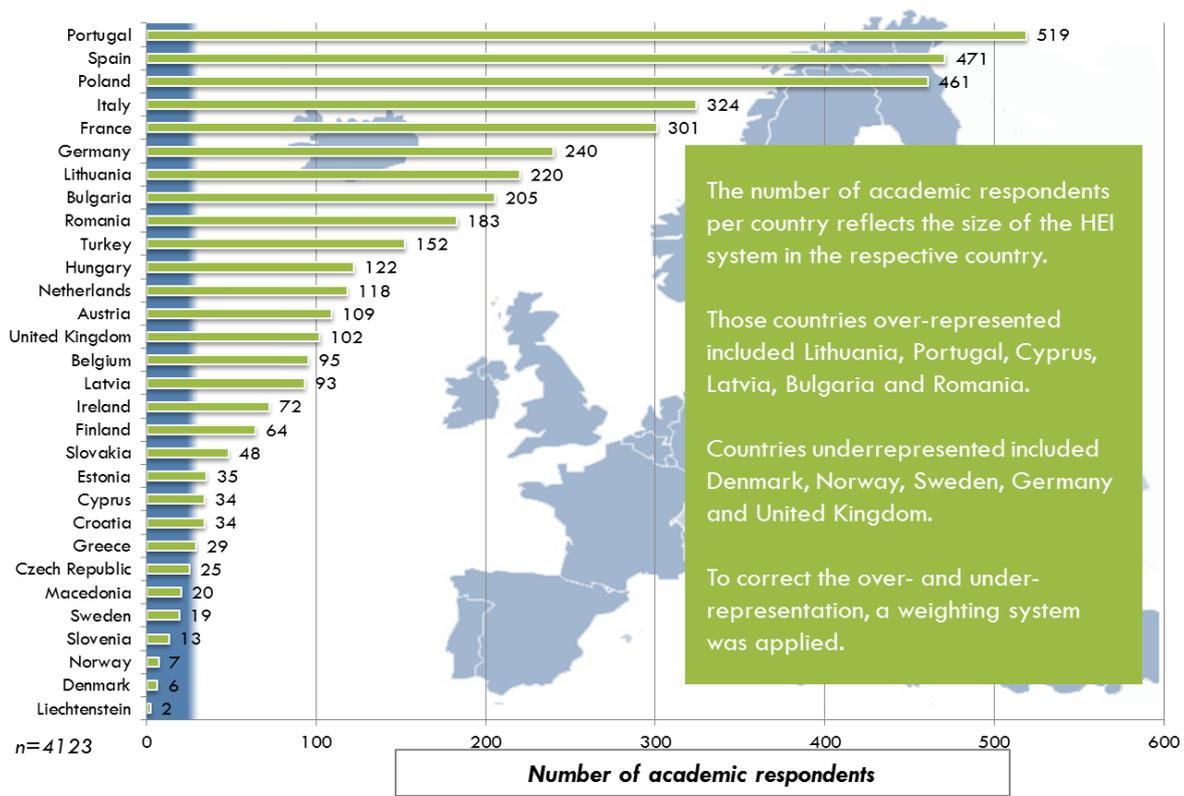
1. **Individual academics** were asked to respond on behalf of themselves.
2. **HEI management** (HEI managers and HEI professionals working with industry) were asked to respond on behalf of their HEI.

	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

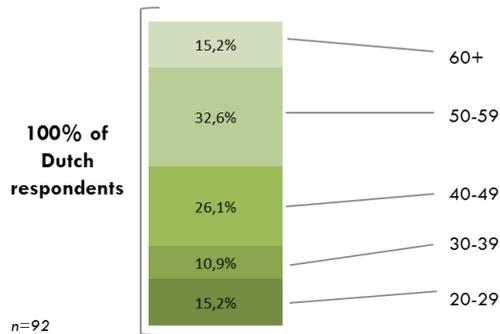
Colour codes have been used throughout the report to identify those results received from the academic (green) and those results received from the HEI (orange).

Respondents (academic)

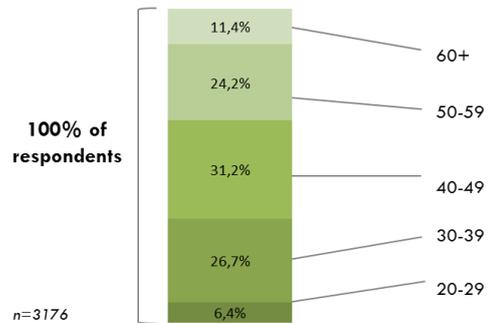
Country



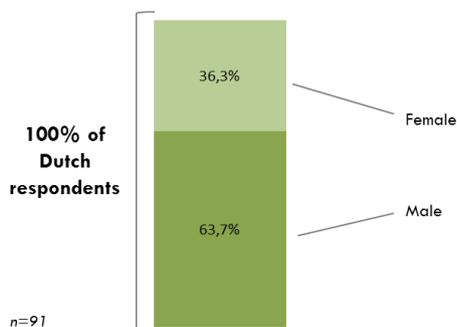
Age of respondents in the Netherlands



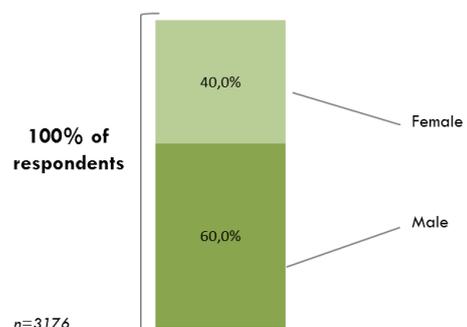
Age of respondents in Europe



Gender of respondents in the Netherlands

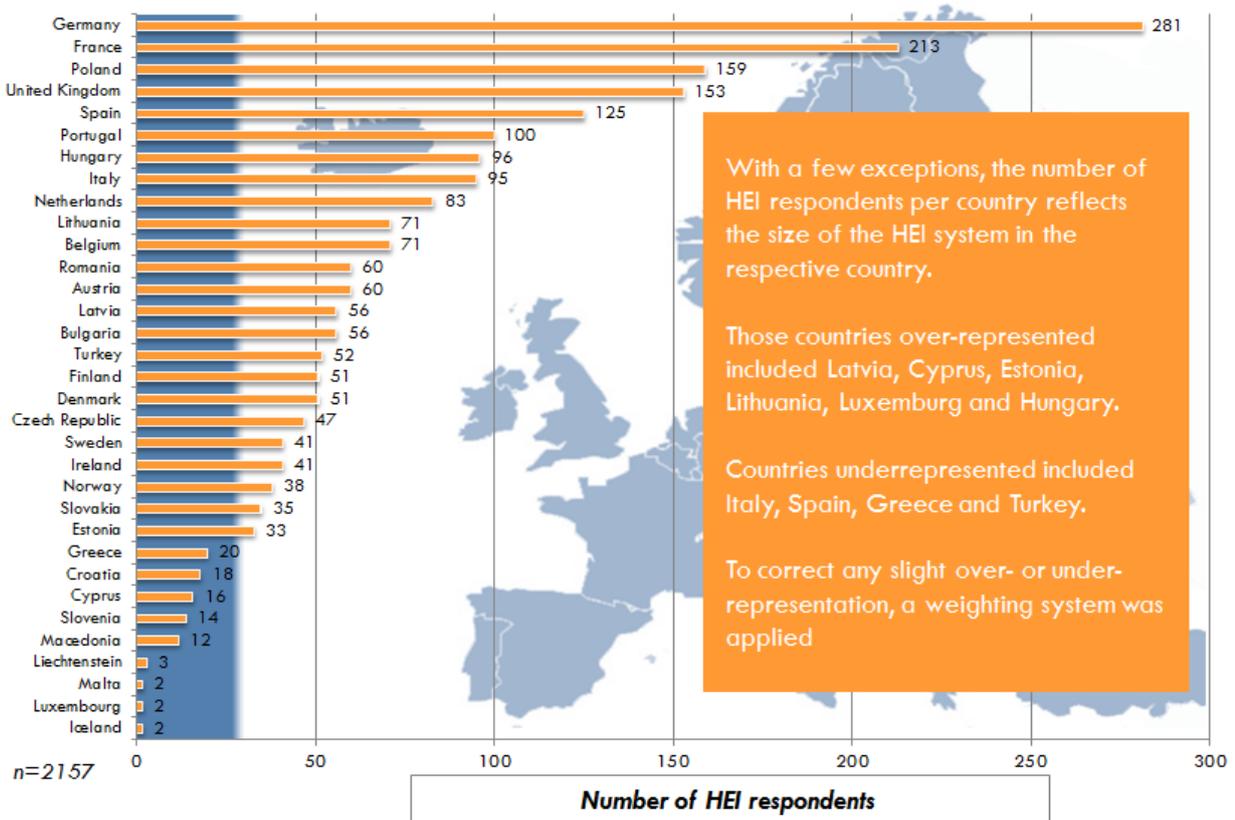


Gender of respondents in Europe

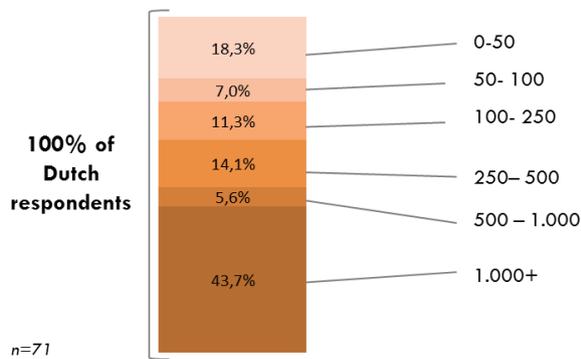


Respondents (HEIs)

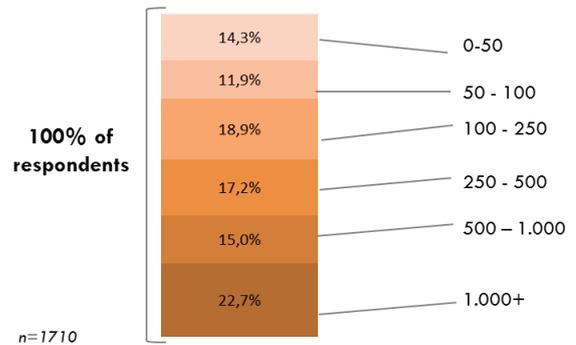
Country



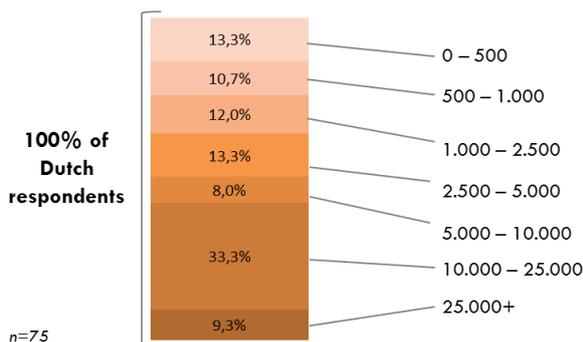
Number of academics per HEI in the Netherlands



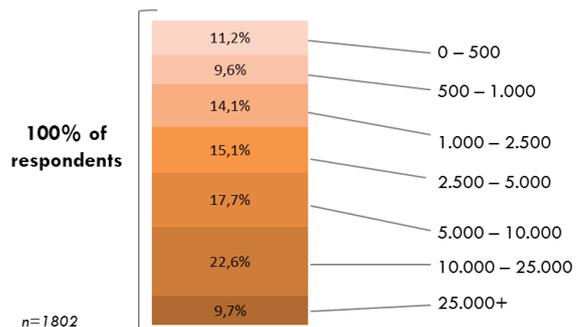
Number of academics per HEI in Europe



Number of students per HEI in the Netherlands



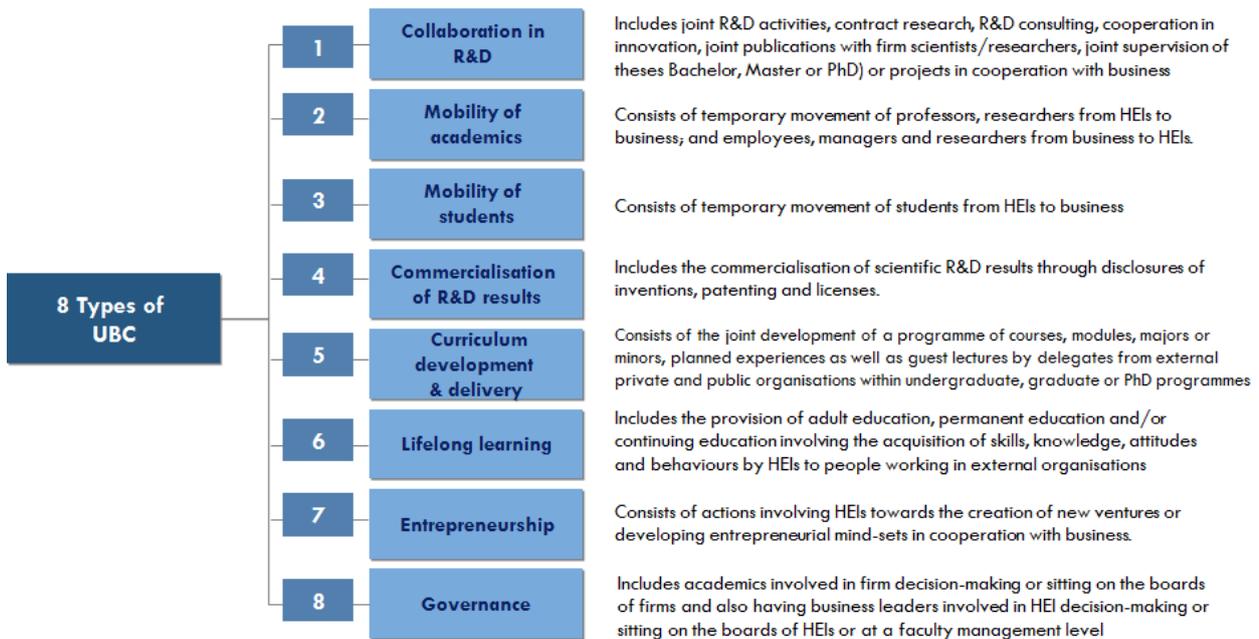
Number of students per HEI in Europe



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:

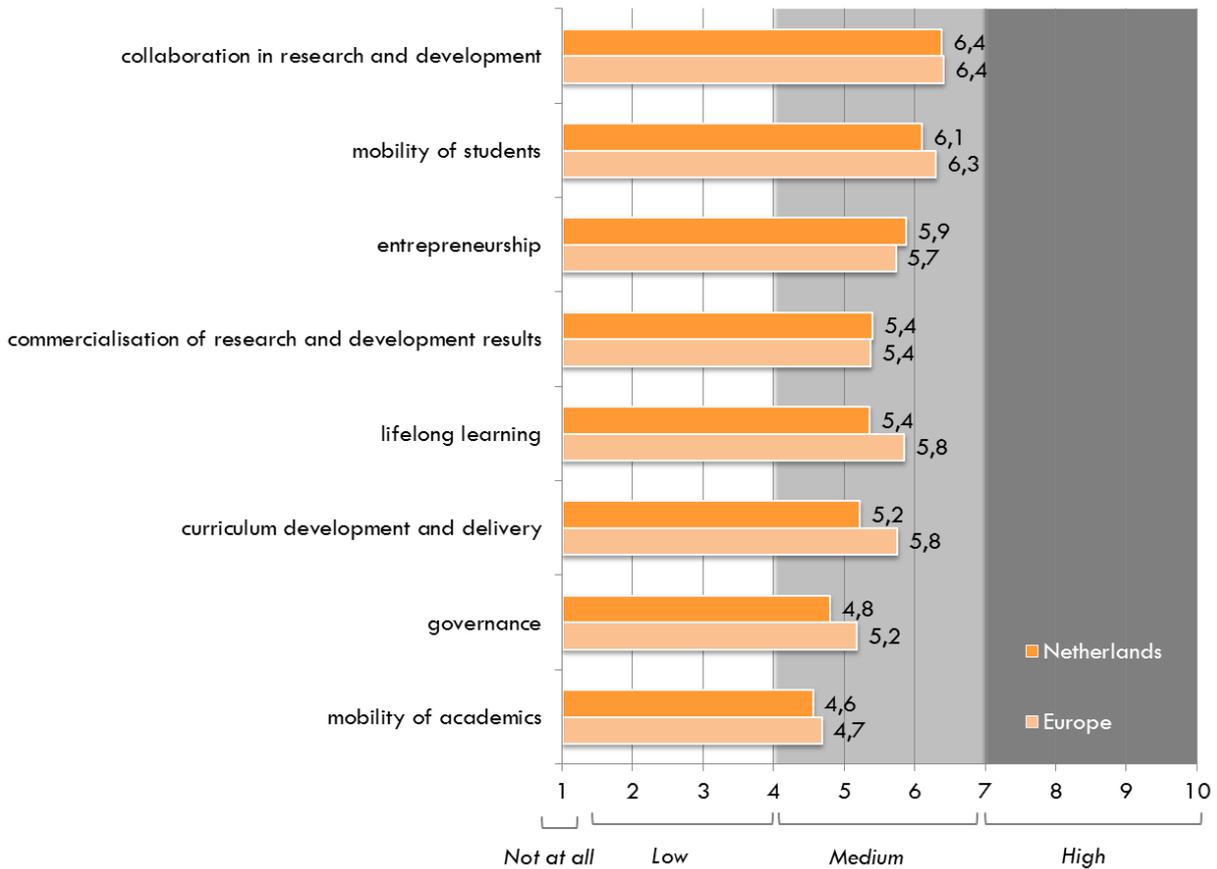
1. the 'innovators' undertaking a high level for all types of UBC,
2. the 'majority' undertaking a medium level for all types of UBC,
3. the 'laggards' executing generally a low level (or not at all) for all types of UBC.

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 the Netherlands

As answered by HEI management



Extent of cooperation in the Netherlands

There is a medium degree of diversity in the development of the different types of UBC in the Netherlands, with 'Collaboration in R&D' (6.4), 'Mobility of students' (6.1) and 'Entrepreneurship' (5.9) as the most developed types.

Benchmarking the Netherlands

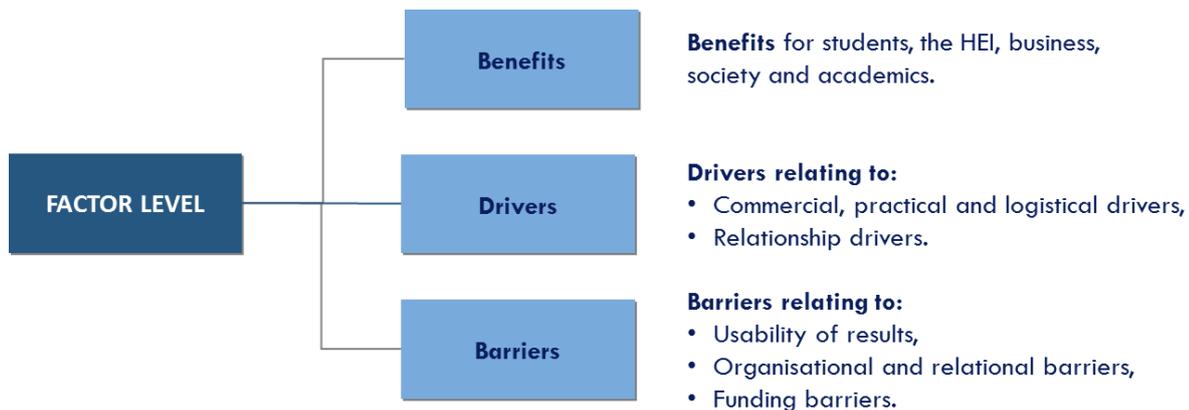
According to the results, Dutch HEI management report the extent of UBC being approximately on the same level as the European average, with a slightly better performance in 'Entrepreneurship' but with the less developed UBC types in the Netherlands lagging behind their European neighbours.

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

	the Netherlands	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. Lifelong Learning 6. Curriculum development and delivery 7. Governance 8. Mobility of Academics 	<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 the Netherlands. 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 Finland compared to the EU average. The barriers have been factored into 'meta-groups' to provide a more strategic understanding.

Barriers (grouped) to cooperation – Netherlands vs. Europe

As answered by academics and HEI management

Usability of results	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Netherlands		Europe	
	ACAD	HEI	ACAD	HEI
<ul style="list-style-type: none"> The focus on producing practical results by business, The need for business to have confidentiality of research results, Business fear that their knowledge will be disclosed. 	5.8	5.5	6.1	6.0

Funding barriers	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Netherlands		Europe	
	ACAD	HEI	ACAD	HEI
<ul style="list-style-type: none"> Lack of external funding for University-Business cooperation, Lack of financial resources of the business, Lack of HEI funding for UBC, The current financial crises. 	6.2	6.7	6.5	6.8

Relational barriers	Extent of relevance (1-10)		Extent of relevance (1-10)	
	Netherlands		Europe	
	ACAD	HEI	ACAD	HEI
<ul style="list-style-type: none"> Business lack awareness of HEI research activities / offerings, The limited absorption capacity of SMEs to take on internships or projects, Differing time horizons between HEI and business, Differing motivation / values between HEI and business, Universities lack awareness of opportunities arising from UB-cooperation, Bureaucracy within or external to the HEI , Limited ability of business to absorb research findings, Differing mode of communication and language between HEI and business, A lack of contact people with scientific knowledge within business, Difficulty in finding the appropriate collaboration partner, No appropriate initial contact person within either the HEI or business. 	5.8	5.9	6.4	6.2

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

Dutch HEI management and academics assess all groups of *barriers* to UBC lesser than the EU average including: *usability of results*, *funding barriers* and *relational barriers*. Academics see *relational barriers* as

Three groups of UBC barriers

Resulting from an analysis of the results, *barrier* can be categorised in the following groups:

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

far less important (5.8 compared to 6.4) while HEI management see the *usability of results barrier* less of an issue than HEI managers in Europe (5.5 compared to 6.0).

Main barriers to cooperation – Netherlands vs. Europe

As answered by HEI management



Funding barriers are the biggest barriers to UBC in the Netherlands (see graph above)

The most prominent barrier named by the Dutch HEI management are those related to the *funding barriers* between the HEI and business including 'lack of external funding for UBC' (7.2), 'lack of financial resources of the business' (6.8) and 'lack of university funding for UBC' (6.7). In addition, Dutch HEI management reported the 'different time horizons between university and business' (6.9) as a key issue.

Lower UBC barriers are perceived in the Netherlands than in Europe (see graph above and previous page)

Dutch HEI management assess most barriers as less relevant than the EU average except for 'lack of external funding for UBC' (7.2 compared to 7.0), 'differing time horizons between university and business' (6.9 compared to 6.6), 'the current financial crises' (6.5 compared to 6.4) and 'universities lack awareness of opportunities coming from UBC' (6.5 compared to 6.2).

With respect to the less relevant barriers in the Netherlands it can be stated that 'bureaucracy within or external to the university' (5.3), 'Difficulty in finding

the appropriate collaboration partner' (4.8) and 'no appropriate initial contact person within either the university or business' (4.6) are seen as far less relevant barriers in Dutch UBC compared to European average. Despite this, previous research has shown that HEI management underestimate the size of the bureaucratic barrier 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 Dutch UBC environment.

Main barriers to UBC in the Netherlands

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

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

Two groups of UBC drivers

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

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

Drivers (grouped) of cooperation – Netherlands vs. Europe

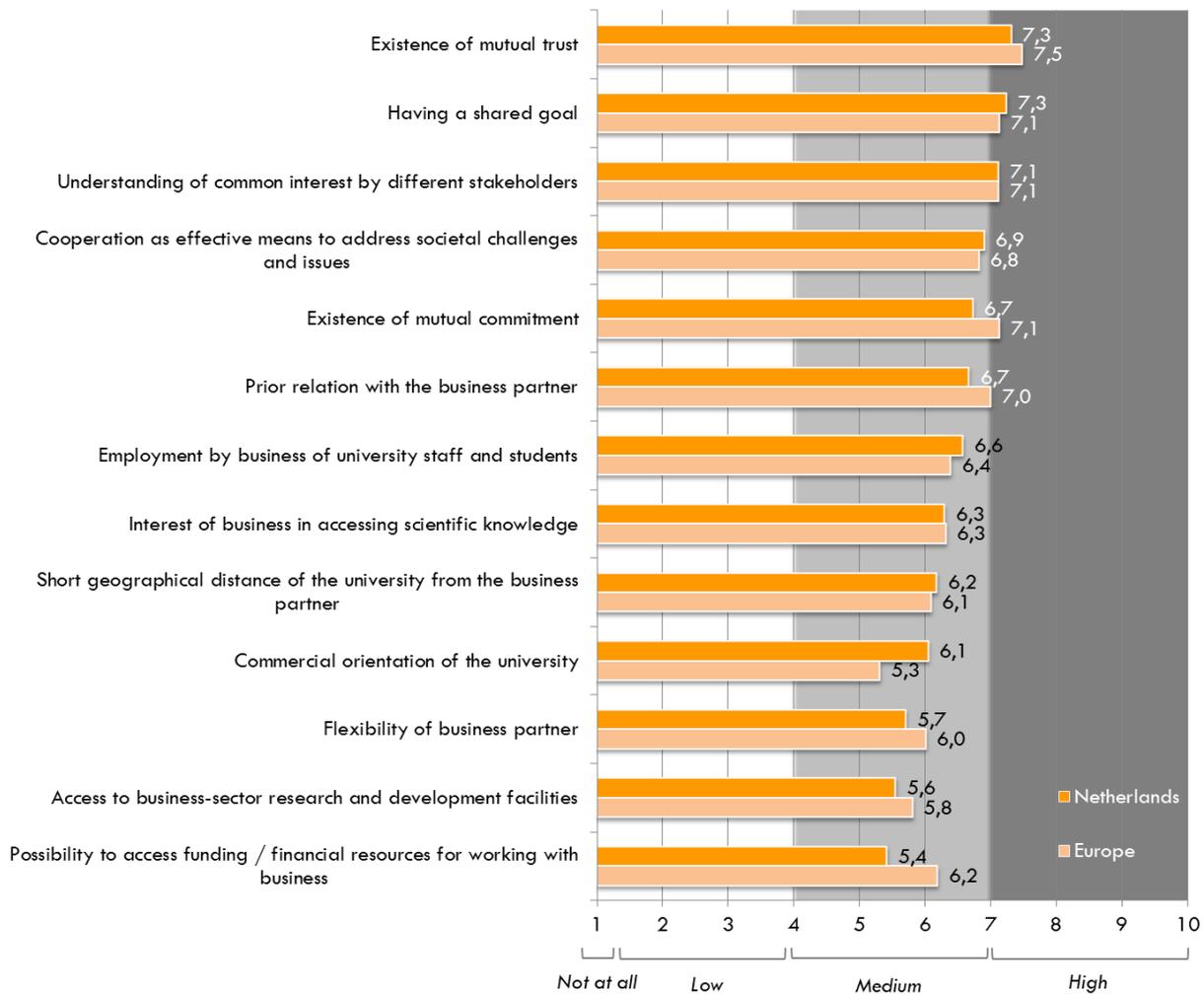
As answered by academics and HEI management

Relationship drivers	Extent of facilitation (1-10)		Extent of facilitation (1-10)	
	Netherlands		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	6.5	ACAD
	HEI	7.0	HEI	7.0

Business drivers	Extent of facilitation (1-10)		Extent of facilitation (1-10)	
	Netherlands		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 – Netherlands vs. Europe

As answered by HEI management



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

The HEI management in the Netherlands perceive the highest drivers of UBC to be *relationship drivers* such as 'existence of mutual trust' (7.3), 'having a shared goal' (7.3), and 'understanding of common interest by different stakeholders' (7.1).

Compared to the *relationship drivers*, most *business drivers* are seen as significantly less important including 'commercial orientation of the university' (6.1), 'flexibility of business partner' (5.7), 'access to business-sector research and development facilities' (5.6), and 'possibility to access funding / financial resources for working with business' (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 the Netherlands agree that *relationship drivers* are greater facilitators for UBC than *business drivers*. This reflects the people nature of cooperation.

Dutch respondents see the drivers of UBC similarly to EU respondents (see table from previous page)

drivers of UBC are assessed similarly by both Netherlands and Europe HEI management as well as Dutch and European academics. The only significant difference identified was in respect to *business drivers* with Dutch respondents assessing it as a lesser driver (6.0) than in Europe (6.7).

Main drivers of UBC in the Netherlands

1. Existence of mutual trust
2. Having a shared goal
3. Understanding of common interest by different stakeholders
4. Cooperation as effective means to address societal challenges and issues
5. Existence of mutual commitment

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 the Netherlands 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 an 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.*

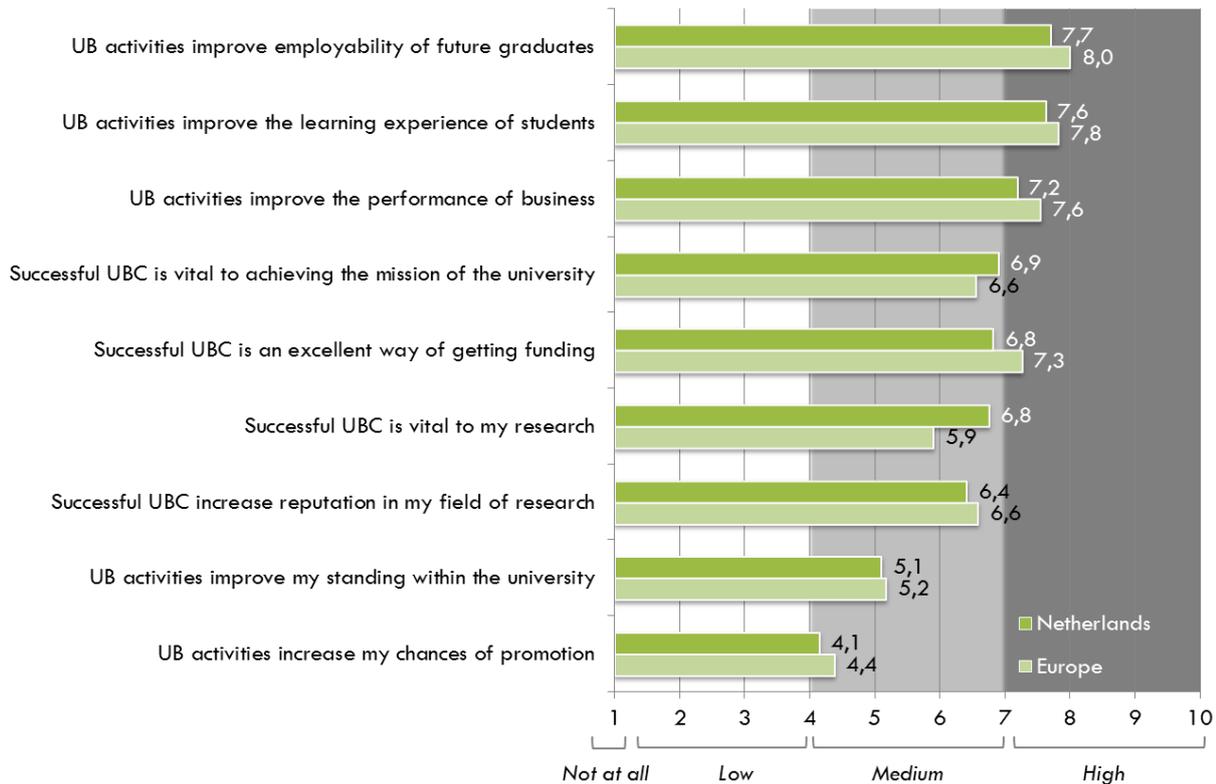
Benefits (grouped) from cooperation – Netherlands vs. Europe

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)	
	Netherlands		Europe	
	ACAD	7.7	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)	
	Netherlands		Europe	
	ACAD	7.2	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)	
	Netherlands		Europe	
	ACAD	6.9	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)	
	Netherlands		Europe	
	ACAD	6.0	ACAD	5.9

Benefits from cooperation – Netherlands vs. Europe

As answered by academics



Students get the most benefit from UBC say academics

Academics in the Netherlands nominate that the greatest *benefits* from UBC go to **students** ('UBC activities improve employability of future graduates' and 'UB activities improve the learning experience of students'), followed by *benefits* for **business** ('UBC activities improve the performance of business') as well as the **HEI** ('successful UBC is vital to achieving the mission of the university') and finally rate **self-benefit** the lowest.

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

Whilst academics report that UBC is vital for their research (6.8), they are much more negative in respect to their *benefits* with respect to an increase in reputation (6.4), their standing in the HEI (5.1) and especially their increasing chances of promotion (4.1).

These results are in line with the grouped results (see previous page). Compared to these relatively high *benefits* for all other stakeholders (7.7, 7.2, 6.9), academics perceive their own *benefits* from UBC much lower (6.0).

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

In comparison with the EU average, Dutch academics see most *benefits* slightly less positively. Two exceptions are 'successful UBC is vital to achieving the mission of the university' (6.9 compared to 6.6) and especially 'successful UBC is vital to my research' (6.8 compared to 5.9).

Overall, Dutch academics perceive the *benefits* from UBC to be of a bit lower extent for students and business, and to be of a bit higher extent for HEIs and themselves.

Main benefits of UBC identified by Dutch academics	
1.	UB activities improve employability of future graduates
2.	UB activities improve the learning experience of students
3.	UB activities improve the performance of business
4.	Successful UBC is vital to achieving the mission of the HEI
5.	Successful UBC is an excellent way of getting funding

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

Benefits (grouped) from cooperation – Netherlands vs. Europe

As answered by HEI management

Three groups of UBC benefits for HEIs

Resulting from an 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.*

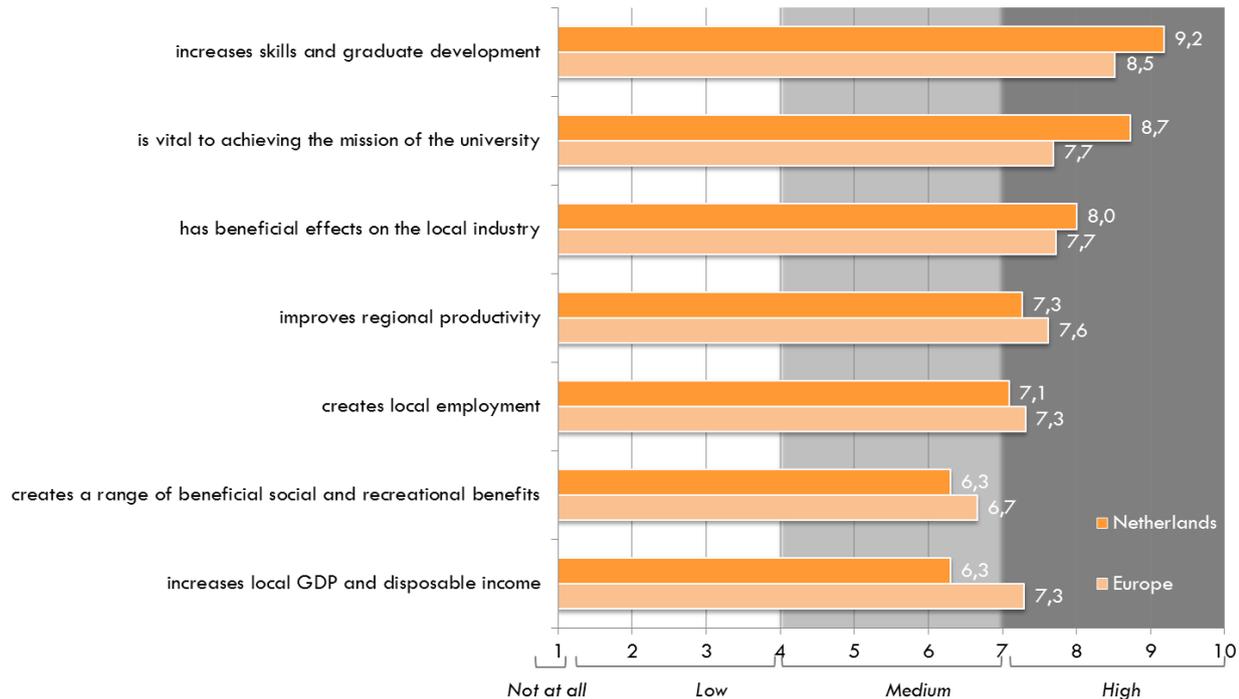
Benefits for the HEI	Extent of importance (1-10)		Extent of importance (1-10)	
	Netherlands		Europe	
	HEI	8.7	HEI	7.7
<ul style="list-style-type: none"> • UBC is vital to achieving the mission of the HEI. 				

Benefits for students	Extent of importance (1-10)		Extent of importance (1-10)	
	Netherlands		Europe	
	HEI	9.2	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)	
	Netherlands		Europe	
	HEI	7.0	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 – Netherlands 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 the Netherlands perceive most benefits from UBC to be of a high extent, with the benefits for **students** ('UBC increases skills and graduates development'), **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 high benefit from UBC.

Higher benefit perceived from UBC for students and HEIs by Dutch HEI management than in Europe (see table previous page and graph above)

Comparing the results to the European average it can be stated that Dutch HEI management see significantly higher benefits for students and the HEI from UBC than in Europe whilst they assess business as receiving similar benefits. Furthermore, while the benefits for the

region and local employment as well as the societal and recreational benefits are stated more similar (only a 0.2 to 0.4 difference is found in each statement), a larger gap, however, can be found with respect to the increase of local GDP and disposable income through UBC. With respect to society then, Dutch HEI management are far more negative than the European average (6.3 compared to 7.3).

Main benefits of UBC identified by Dutch HEI management

1. UBC increases skills and graduate development
2. UBC is vital to achieving the mission of the HEI
3. UBC has beneficial effect on the local industry
4. UBC improves regional productivity
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 (UBC) study results, decision makers, managers and practitioners involved in UBC 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 UBC,
3. proactive areas of focus for increasing UBC,
4. the required information to advance UBC 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 UBC.



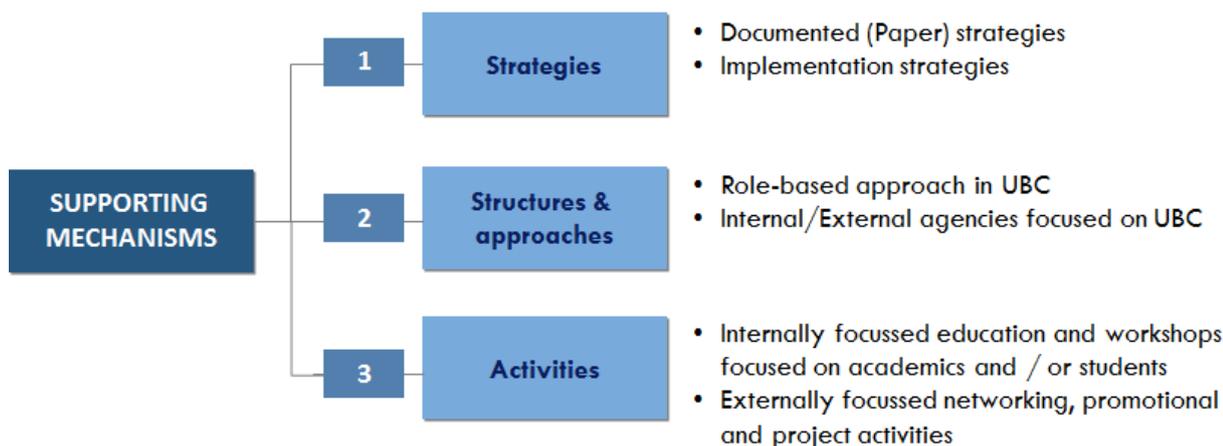
...your university!

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 the Netherlands. 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 an 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) – Netherlands vs. Europe

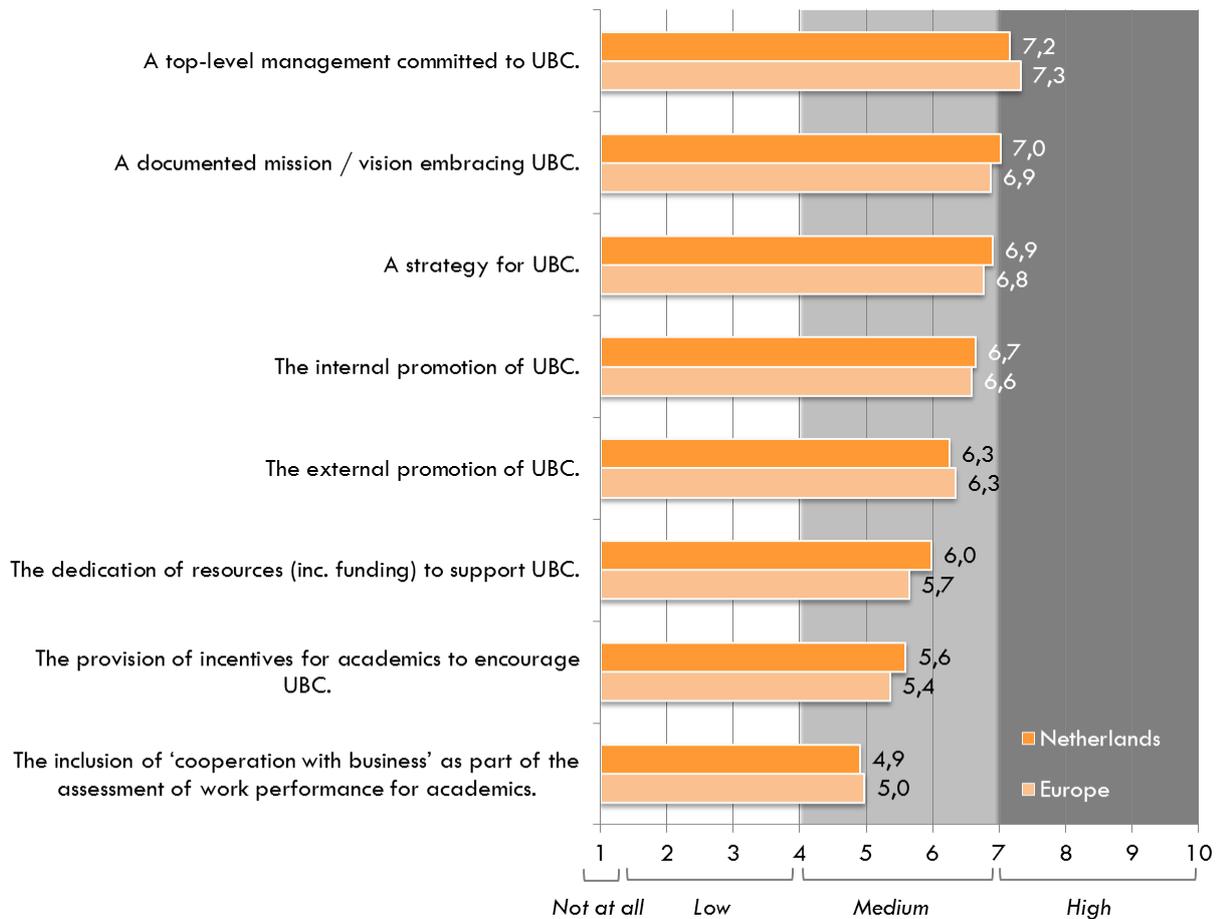
As answered by HEI management

Documented (Paper) strategies	Extent of development (1-10)		Extent of development (1-10)	
	Netherlands		Europe	
	HEI	6.7	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)	
	Netherlands		Europe	
	HEI	5.4	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. 				

Development of UBC strategies – Netherlands vs. Europe

As answered by HEI management



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

The most developed UBC strategies in the Netherlands, as reported by Dutch HEI management, are 'a top-level management committed to UBC' (7.2), 'a documented mission / vision embracing UBC' (7.0) and 'a strategy for UBC' (6.9). On the other extreme, 'the inclusion of cooperation with business as part of the assessment of work performance for academics' (4.9), 'the provision of incentives for academics to encourage UBC' (5.6) and 'the dedication of resources, incl. funding, to support UBC' (6.0) are only developed to a lower degree (compared to other strategies).

Strategies are similarly developed in the Netherlands as in Europe (see graph above)

When compared to the European average, the Netherlands shows a similar extend of implementation of UBC strategies with most items showing only an insignificant difference in responses. The largest gap is found in the 'dedication of resources, incl. funding, to support UBC' where the Netherlands performs slightly better (+0.3) than the European average.

On a factored (grouped) level, *documented strategies* are significantly more developed in the Netherlands than *implementation and motivation strategies* supporting UBC. Overall, no significant differences between the Netherlands and Europe can be found on a factored level.

UBC strategies in the Netherlands	
Highly developed	<ol style="list-style-type: none"> 1. A top-level management committed to UBC 2. A documented mission / vision embracing UBC
Moderately developed	<ol style="list-style-type: none"> 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

UBC *structures and approaches* are constructions created as a result of top-level strategic decisions within (or related to) a HEI that are an ‘enabler’ of UBC and include the creation or development of institutions, positions, methods and policies and programmes. They are put in place in order to promote, develop or implement UBC with a mid to long term focus and can be created within the HEI or 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 an 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) – Netherlands vs. Europe

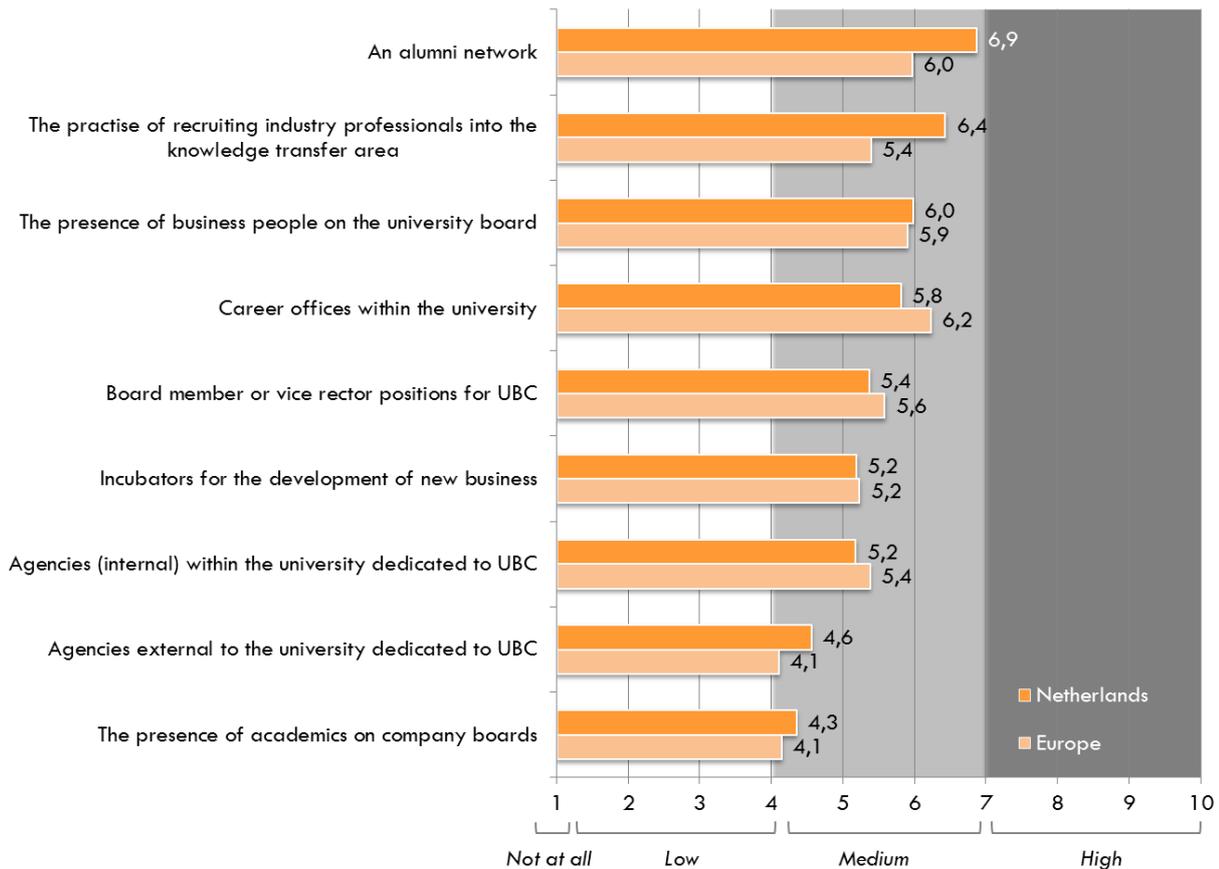
As answered by HEI management

Roles-based approaches in UBC	Extent of development (1-10)		Extent of development (1-10)	
	Netherlands		Europe	
	HEI	5.9	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)	
	Netherlands		Europe	
	HEI	5.2	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 –Netherlands vs. Europe

As answered by HEI management



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

The extent of development of the structures and approaches for UBC in the Netherlands shows that role-based approaches in UBC are significantly more developed than internal/external agencies focused on UBC (5.9 compared to 5.2). This is supported by the result shown in the graph above where the role-based approach is evident through the development of 'alumni networks' (6.9), 'the practise of recruiting industry professionals into the knowledge transfer area' (6.4) and 'the presence of business people on the HEI board' (6.0).

'Alumni networks' and 'the practise of recruiting industry professionals into the knowledge transfer area' are significantly more developed in the Netherlands than in Europe (6.9 compared to 6.0 and 6.4 compared to 5.4).

Similar development of structures and approaches to Europe

While internal/external agencies focused on UBC shows a similar extent of development in the Netherlands compared to the European average (5.2 to 5.4), role-based approaches are more developed in the Netherlands (5.9 to 5.4).

With respect to agencies focused on UBC it can be stated that the Netherlands has, on average, more 'external agencies dedicated to UBC', but slightly less 'internal agencies' and especially less career offices within the universities (-0.4) compared to the European average.

Medium developed structures and approaches	<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. Career offices within the HEI 5. Board member or vice rector positions for UBC 6. Incubators for the development of new business 7. Agencies (internal) within the HEI dedicated to UBC 8. Agencies external to the HEI dedicated to UBC 9. The presence of academics on company boards
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Operational activities for UBC

Operational activities are actions of a practical and immediate nature undertaken by HEIs, governments, regional agencies, HEIs and business to create and support UBC. *Operational activities* are usually the least cost to implement of all the *supporting mechanisms*, require less commitment from HEI management and whose scope and volume can be described/measured.

Three groups of UBC operational activities

Resulting from an 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*

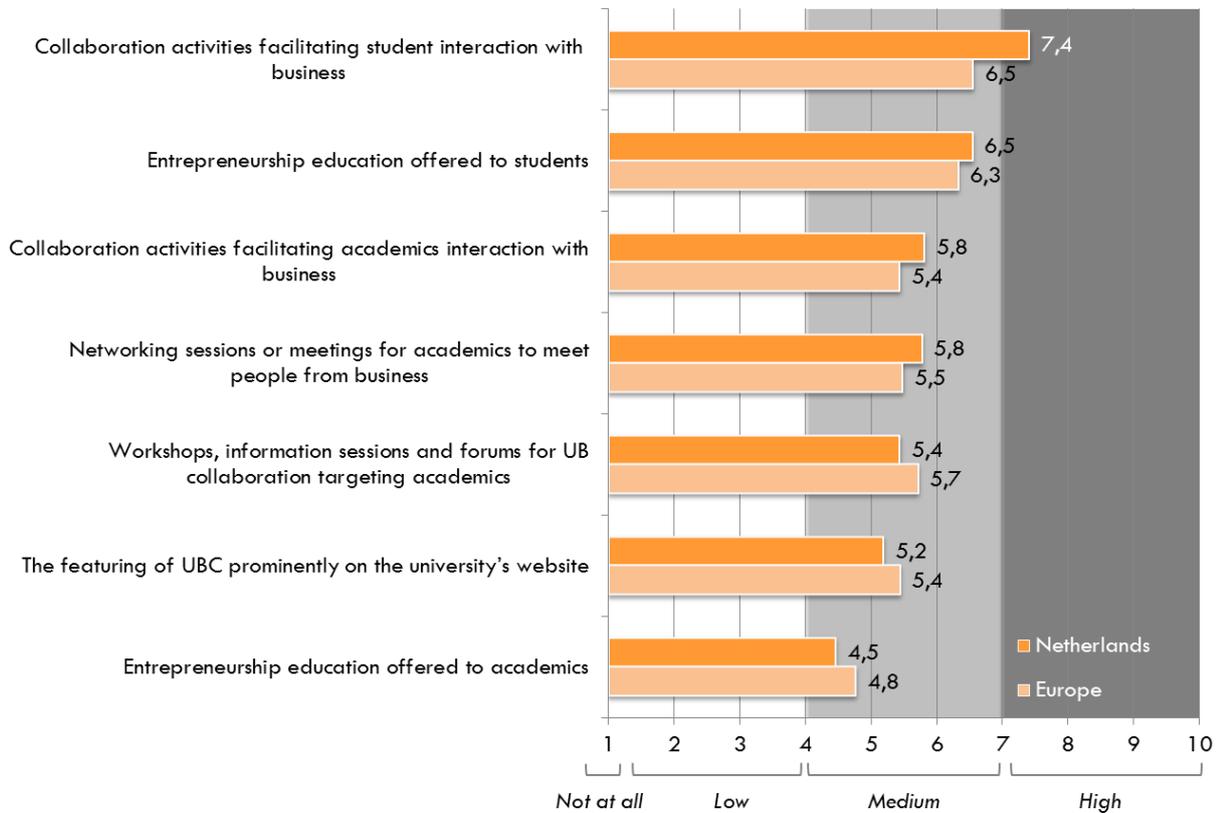
Development of UBC operational activities (grouped) – Netherlands vs. Europe

As answered by HEI management

Internally focused education and workshops focused on <u>academics</u> <ul style="list-style-type: none"> • Workshops, information sessions and forums for University-Business collaboration targeting academics, • Entrepreneurship education offered to academics. 	Extent of development (1-10)		Extent of development (1-10)	
	Netherlands		Europe	
	HEI	5.0	HEI	5.3
Internally focused education and workshops focused on <u>students</u> <ul style="list-style-type: none"> • Entrepreneurship education offered to students. 	Extent of development (1-10)		Extent of development (1-10)	
	Netherlands		Europe	
	HEI	6.5	HEI	6.3
Externally focused networking, promotional and project activities <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. 	Extent of development (1-10)		Extent of development (1-10)	
	Netherlands		Europe	
	HEI	6.1	HEI	5.7

Development of UBC operational activities – Netherlands vs. Europe

As answered by HEI management



Students are the focus of UBC activities in the Netherlands (see graph this page)

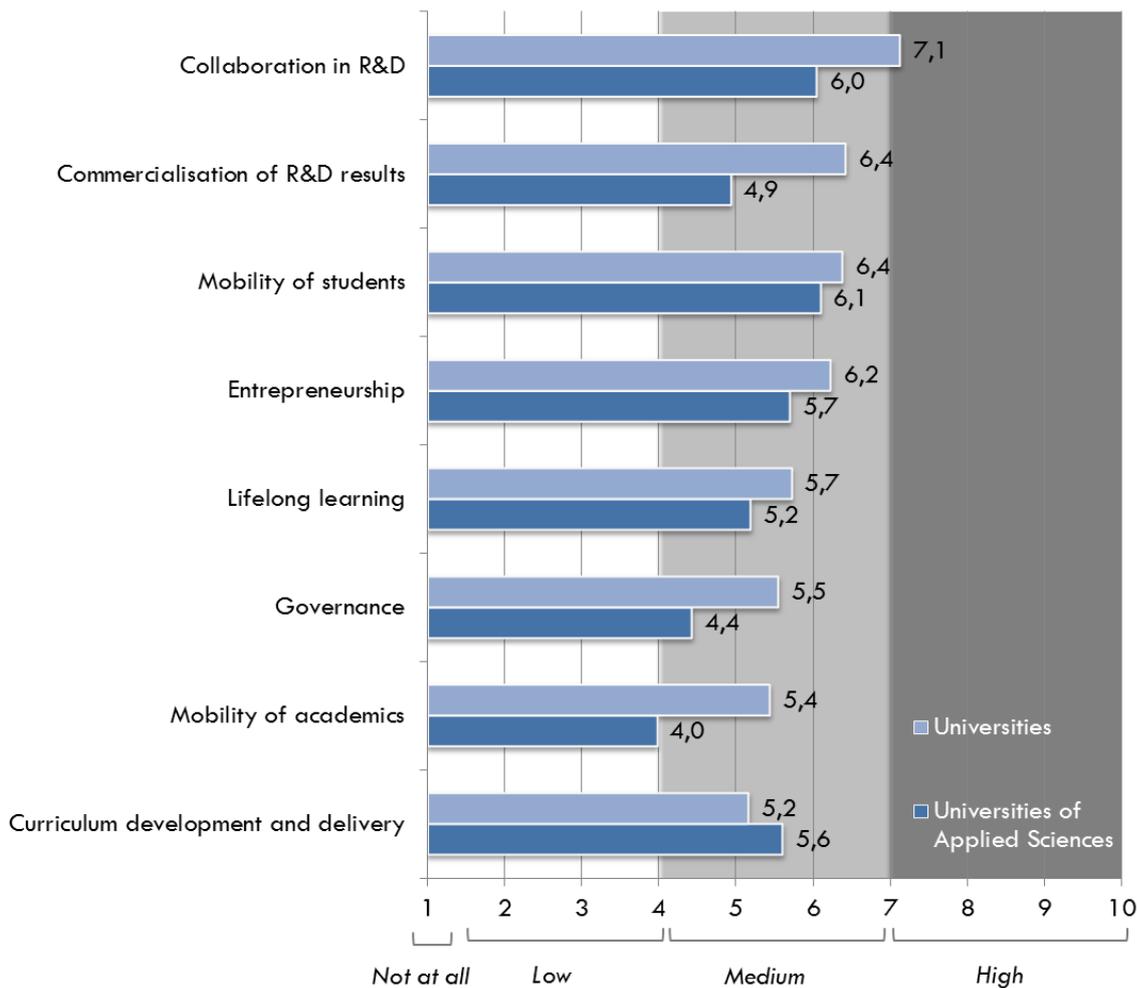
Regarding 'collaboration activities facilitating student interaction with business' the Netherlands is very well advanced, and in comparison to the European average (7.4 compared to 6.5) While 'entrepreneurship education offered to students' (6.5) is also well developed, 'entrepreneurship education offered to academics' is found to be the least developed *operational activities* measured (4.5). In addition, 'featuring UBC prominently on the university website' (5.2) and 'workshops, information sessions and forums for UBC collaboration targeting academics' (5.4) are not that well developed.

Minor difference in the development of UBC activities compared Europe (see table previous page)

On a factored (grouped) level, it can be summarised that the Netherlands is slightly more developed than the European average with respect to *externally focused networking, promotional and project activities* (6.1 compared to 5.7) as well as *internally focused education and workshops focused on students* (6.5 compared to 6.3). With respect to *internal activities focused on academics*, however, the Netherlands lags a bit behind the European average (5.0 compared to 5.3).

Highly developed	1. Collaboration activities facilitating student interaction with business
Moderately developed	2. Entrepreneurship education offered to students
	3. Collaboration activities facilitating academic interaction with business
	4. Networking sessions or meetings for academics to meet people from business
	5. Workshops, information sessions and forums for UBC targeting academics
	6. The featuring of UBC prominently on the HEI's website
	7. Entrepreneurship education offered to academics

The difference between universities and applied sciences universities in the Netherlands



It is commonly recognised in the Netherlands that there is a difference between universities and universities of applied sciences (hogeschool or HBOs), more so than perhaps any other country in the world, and so it is with UBC.

As an example, we need to look no further than the development of the different types of UBC with universities perceiving themselves to have a much higher degree of cooperation than HBOs. These differences continue to appear in the results with Dutch universities perceiving a higher amount of barriers (factors inhibiting UBC) and a significantly

higher degree of *drivers* (motivating UBC) for cooperation than HBOs.

Furthermore, the extent of development of UBC *supporting mechanisms* shows further differences. Universities have more developed *strategies* (in 6 of the 8 *strategies*) and much more developed *structures and approaches* for UBC (in 9 of 9 S&A) than HBOs however HBOs have more developed UBC *activities* (in 5 of 7 activities), which have a lower investment required, than universities.

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, aprimo UG, Business Arena.

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

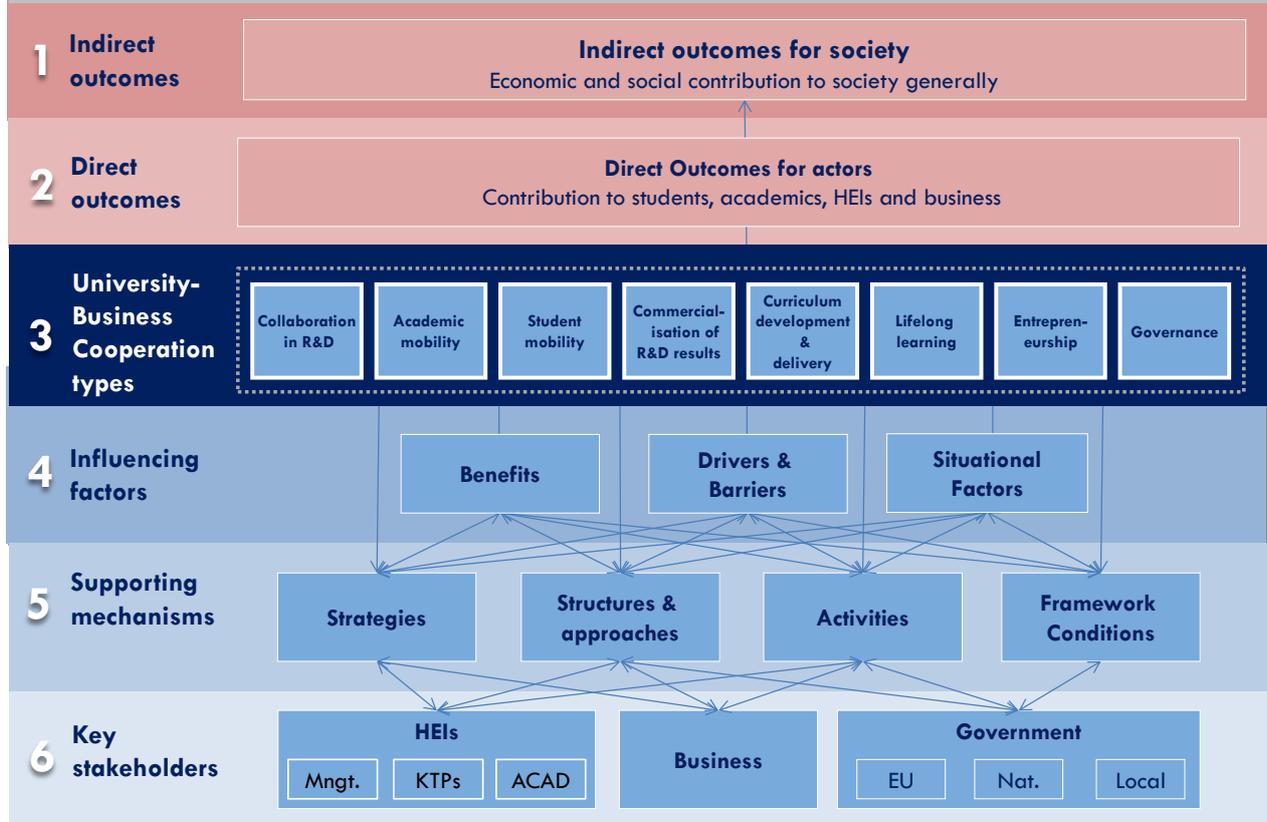
Are you?

- 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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