RAND EUROPE

Governance and Adaptation to Innovative Modes of Higher Education Provision

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1. Executive Summary

This project examines innovative modes of higher education provision, as well as ways in which the management and governance of higher education are changing in support of innovations in higher education provision. At a time when more students than ever are attending higher education, its provision is becoming more fluid, global and competitive. For example, developments in new technologies mean that higher education institutions (HEIs) can make their courses available all over the world. These developments bring into question the traditional delivery model of higher education institutions, which tends to be confined to physical – and hence geographically defined – course offerings.

The project, which started in October 2013 and was completed by the end of June 2016, was funded by the Lifelong Learning Programme of the European Commission.

Partnership. Our Europe-wide consortium consists of 12 partner institutions (universities, higher education institutions and research institutes) across 9 European countries.

Methodology. The methodological approach followed by the project consisted of desk research, the development and implementation of an online survey to gather the perceptions of higher education leaders on innovation, and the production of institutional case studies to determine best practices. The survey was disseminated across representatives of higher education institution leaders in 47 institutions in 9 countries (Austria, France, Ireland, Latvia, the Netherlands, Romania, Slovakia, Slovenia and Spain).

Target audience. The project has two target audiences. The first target audience is administrators and professionals in higher education institutions who are involved in innovation. The project aims to facilitate the exchange of best practices regarding the structures which help to promote innovation in higher education, and to gain a better understanding of how these structures are evolving over time. The second target audience is professionals in national governments and other organisations which also have an interest in higher education management.

Outcomes. The project has led to the production of various reports to inform audiences of the results. These reports include a literature review, survey and case study reports, and a research report which summarises the findings of the study. The project also produced a list of recommendations, and a self-assessment tool to support higher education practitioners in identifying what is needed to support innovation in their institutions. In addition, the project undertook various activities to exchange practices, several workshops to exchange experience, the design of a

training course for HEI managers and teachers, institutional visits, various publications, and presentations at conferences.

A project website was created, and it has been continually updated to include all relevant project information, as well as a platform for partners to exchange information. It is available at www.he-governance-of-innovation.esen.education.fr.

Results. The results of our research are the following:

- First, innovations include various aspects of education provision, including but not limited to digital innovations. These innovations include changes in teaching methods, curricula and programmes that allow for reaching a different student demographic – for example, through partnerships outside of the university.

- Our participating institutions have highlighted several examples of promising practices in education provision and governance and management. These promising practices cover examples which add value to the institution and have the proven or expected potential to be transferrable and sustainable.

- University governance and management structures and approaches can support innovation in a number of ways. These approaches include expressing a high-level institutional commitment and establishing an institution-wide strategy to support innovation; providing institutional, organisational and financial support to innovation; and conducting regular evaluations of the initiatives. Given that most HEIs are public in the European Union, supporting innovation also relies on an appropriate regulatory environment set by national governments and a stable and wide funding base.

Recommendations. Based on these findings, our consortium wishes to issue the following recommendations:

- Innovation relies first and foremost on an institution-wide leadership and strategy which bind the institution around a sense of purpose, the implementation of which needs to be regularly evaluated. Leaders include senior representatives supporting innovation. But staff and students also have a role to play in generating ideas. As Burton Clark (1998) has argued, university autonomy and financial resources are not sufficient conditions for innovation if the leadership of the institution chooses to concentrate on the past rather than look to the future. We therefore recommend that each HEI include innovation objectives, defined in measurable performance targets, in its strategy.

- In addition, HEIs need to provide the right institutional support; organisational flexibility; financial incentive; and evaluation, impact and quality assurance framework to support innovation. We therefore recommend that each HEI consider how the types of institutional support, organisational layout, financial

incentives and evaluation procedures enhance the institution's innovation potential.

- Innovation needs to be understood broadly. It does not only include new technologies (although digital innovation was understandably popular). Our case study and survey material suggest that competency-based methods of teaching, for example, relying on student's problem-solving skills rather than the lecturer's narrative, are also gaining ground in Europe. In addition, new technologies are not an end product; they need to be included in a coherent pedagogical approach. We recommend that HEIs consider not just investing in technology, but also prioritising training staff and developing support structures to facilitate the inclusion of innovation in a coherent teaching and learning approach.

We welcome and encourage the further exchange of practices across institutions of higher education in Europe as well as other stakeholders, in order to facilitate the transmission of ideas. This further exchange could be articulated around the dimensions to support innovation, using relevant tools, such as the self-assessment tool used in this project.

This final report concentrates on the main findings of the study.

The project website includes additional documents and publications released as part of this project. These documents are available at: www.he-governance-of-innovation.esen.education.fr

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Acronyms

CBL	Case-based Learning
CCN	Centre de Culture Numérique (Digital Technology Culture Centre)
CPI	Construction des Produits Innovant (Innovation Product Construction)
DaW	Degrees at Work
ESSEC	École Supérieure des Sciences Économiques et Commerciales (Economic and Commercial Sciences College)
EU	European Union
GAIHE	Governance and Adaptation to Innovative Modes of Higher Education Provision
HE	Higher Education
HEI	Higher Education Institution
HR	Human Resources
HRM	Human Resources Management
ICT	Information and Communication Technology
MOOC	Massive Open Online Course
OECD	Organisation for Economic Co-operation and Development
OUN	Observatoire des Usages du Numérique (Observatory of the Uses of Digital Technologies)
PBL	Problem-based Learning
QA	Quality Assurance
RUA	Repositorio Institucional de la Universidad de Alicante (Institutional Repository of the University of Alicante)
UCM	University Content Management
VLE	Virtual Learning Environment

2. Project Objectives

Authors: E. Harte, J. Hofman and C. McGrath, RAND Europe

This chapter presents our consortium (section 2.1) and the background to this study, and it places the project in the context of the European Union (EU) priorities (section 2.2). The chapter outlines the aim and objectives of the project (section 2.3), as well as the key research questions (section 2.4).

2.1 Our consortium and project

An introduction to our consortium will help to frame the project and its objectives. Our Europe-wide consortium consists of 12 partner institutions, including universities, higher education institutions and research institutes, across 9 European countries.

Our consortium emerged from the consortium of the Maastricht-based foundation Empower European Universities, a foundation set up under Dutch Law. As a result of a one-year collaboration with correspondents/network members (the consortium partners being part of this network), Empower European Universities (Hoareau et al. 2012) conducted a Europe-wide assessment of how higher education policies contribute to higher education performance and economic growth (*The State of University Policy for Progress in Europe* report, which was completed in December 2012).

As part of this work, the consortium partners met during three conferences in 2011 and 2012 and reached the conclusion that there was a need for a better understanding and conceptualisation of university governance from a comparative perspective, especially given recent innovations in higher education. They thus formed the partnership which became the basis for the project Governance and Adaptation to Innovative Modes of Higher education Provision (GAIHE).

This research report constitutes one of the main deliverables of the GAIHE project. Other project deliverables include various activities to exchange practices and facilitate mutual learning. Peer learning and training course activities, as well as a series of institutional visits, have been included in section 4.1 of the public report.

This project was specifically designed and implemented by the following institutions:

- Comenius University in Bratislava (Slovakia)
- Dublin Institute of Technology (Ireland)
- École Normale Supérieure de Lyon (France)

- Lucian Blaga University of Sibiu (Romania)
- Maastricht University (the Netherlands)
- RAND Europe
- University of Alicante (Spain)
- University of Latvia
- University of Maribor (Slovenia)
- University of Salamanca (Spain)
- University of Ss. Cyrill and Methodius in Trnava (Slovakia)
- University of Strasbourg (France)

2.2 Background to the role of universities in the 21st century

New technologies have opened up the borders to knowledge. Ideas, data, communication and creativity are available worldwide on the web. This diminishes the local monopoly of knowledge that universities have traditionally enjoyed (Peters 2003; Senges 2007; Barber et al. 2013; Flavin 2013). Yet, at same time, universities have a more important role to play than ever in a global and regional community (Chatterton & Goddard 2000; Gunasekara 2004; Srinivas & Viljamaa 2008).

This fundamental role of universities can be articulated around three functions according to the literature:

- Guarding the quality of knowledge production and dissemination

Universities act as guardians of the quality of knowledge production and dissemination. The academic community remains the main actor in the validation of scientific theories through an intensive falsification process, for example through academic peer review prior publication. The growing use of information and communication technology (ICT) has understandably changed the world of academic research and publications, with a greater reliance on 'open science' to diffuse research outcomes (OECD 2010).

- Promoting critical and reflective thinking

Universities promote critical and reflective thinking, with the guidance of faculty members (Brennan et al. 2014). Promoting critical and reflective thinking includes helping students to acquire a set of skills and competencies, such as being able to communicate complex information to diverse audiences, being able to be resilient when confronted with a problem, being able to structure an argument, etc. Which

skills and competencies higher education should provide and how these skills and competencies develop during a course of studies has been debated in the literature (see, for example, Evers & O'Hara 1996).

- Structuring learning

Universities also fulfil a core function in structuring learning, including lifelong learning, in order to transition graduates to the labour market (Istance 2011; Istance & Kools 2013; Redecker et al. 2009).

2.3 European Union priorities addressed by this project

The Governance and Adaptation to Innovative Modes of Higher Education Provision project is funded by the European Commission Lifelong Learning Programme under an Erasmus Multilateral grant.

In this respect, this project tackles one main area for reforms of the EU2020 strategy (EC 2010), namely, to create effective governance mechanisms in support of excellence. The emergence of new ways to provide teaching content has sparked a strong debate about how to maintain the quality of higher education worldwide. As such, this project ties in with the European Commission's objectives to enhance the quality of higher education in an environment where globalisation and the attractiveness of the European higher education area need to be reinforced (EC 2011).

Developing excellence in teaching and learning and enhancing lifelong learning implies that higher education institutions should use the latest developments in teaching in order to respond to competitive pressures from other higher education institutions, in the European Union and beyond. The GAIHE project prioritises the improvement of governance by identifying and disseminating promising practices in how university governance is adapting to innovative modes of provision.

This project intends to strengthen the action of the Education and Training 2020 Work Programme by finding and recommending the most effective modes of provision of key competences. The project also issues policy recommendations regarding the governance and management of new modes of higher education provision in order to enhance the attractiveness and relevance of European higher education and to increase the strategic capacities of higher education institutions (HEIs) to manage resources efficiently and effectively. Finally, the project promotes an awareness of the importance of cultural and linguistic diversity within Europe by bringing together a team of researchers representing varied backgrounds, organisational cultures and experiences (Council Conclusions of 12 May 2009; see also DG EAC (2009).

2.4 Project aims and objectives

The GAIHE project aims to support higher education institutions in their understanding of the practices in existence around Europe as well as how to support these practices. The project addresses several objectives:

In line with the *Lifelong Learning Programme Guide 2013* (EC 2013, 4), the objectives of this project are the following:

- **General objective:** Foster interchange, cooperation and mobility among education and training systems within the EU so that they become a world-quality reference.
- **Specific objective:** Encourage the best use of results, innovative products and processes and exchange in the fields covered by the Lifelong Learning Programme.

The consortium fulfils these objectives by:

- Identifying and discussing promising practices relevant to innovation in higher education provision
- Analysing and discussing the drivers, barriers and ways through which the governance and management of HEIs support these innovations
- Issuing recommendations regarding the role of university governance and management
- Disseminating the results of the project to relevant stakeholders outside of our consortium

In doing so, the project fosters multilateral co-operation among HEIs in Europe, providing a platform for mutual learning and furthering the understanding of new modes of provision, including several HEI partnerships (e.g. in hubs or branch campuses).

2.5 Key questions

Specifically, the GAIHE project seeks to answer four (sets of) key questions:

- **Q1**: What are some of the promising modes of education provision across Europe?
- **Q2**: How does the governance and management support these practices (or change to adapt to them)? What is the role of HEI governance and day-to-day management processes in establishing and regulating innovative modes of provision?
- **Q3:** What are the main barriers and drivers for innovative education provisions?

- **Q4:** Which recommendations can be issued regarding higher education institution management in innovative provision?

3. Project Approach

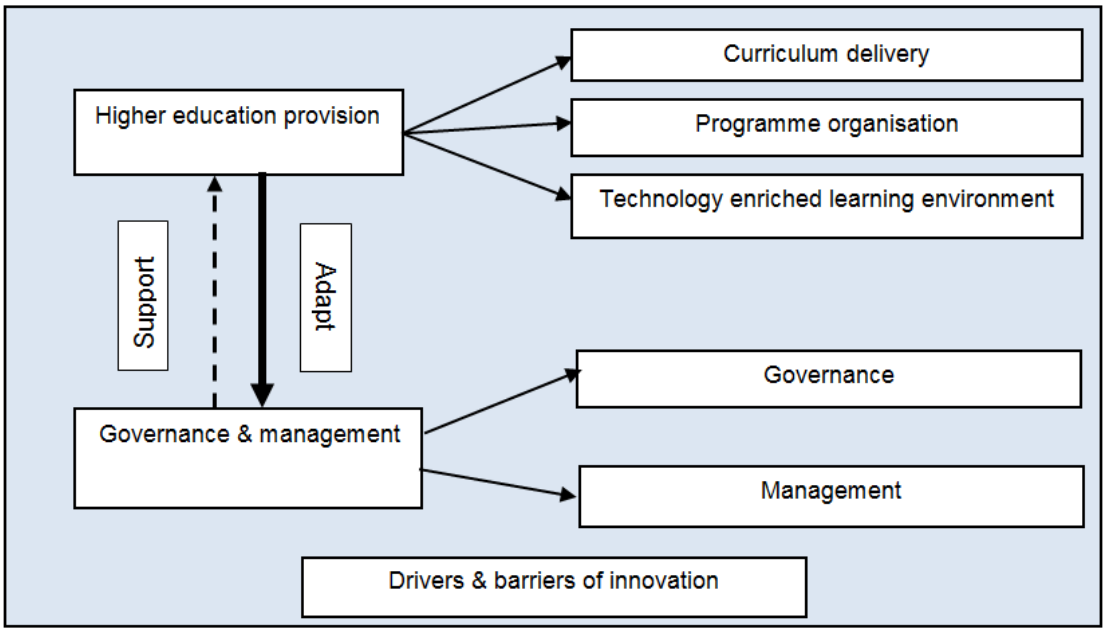
This chapter introduces our project model and defines our key terms, including innovation (3.4), governance and management (3.5). The chapter then explains the theories (3.6) of the project.

3.1 Project model

Authors: S. Sasso, Maastricht University; C. McGrath, RAND Europe

This section briefly outlines the broad model underpinning the GAIHE project, which stems from the two-way relationship between innovation in higher education provision and changes in HEI governance and management.

Figure 1: Project model



Source: GAIHE

The project covers innovations in higher education provision, namely, regarding curriculum delivery, programme organisation and IT-enriched learning environment, as indicated in Figure 1. It also explains how governance and management can support innovation, as well as the drivers for and barriers to innovation.

3.2 Our definition of the term innovation

Authors: J. Bélanger and C. McGrath, RAND Europe

This section defines and operationalises key concepts as they relate to the GAIHE project. In particular, this section aims to provide answers to the following questions:

- How do we define innovation?
- Is innovation context-specific or 'absolute'?
- What are innovations in higher education provision, management and governance?

This project assumes a positive normative value to innovation, and therefore, in line with the Organisation for Economic Co-operation and Development's (OECD) *Oslo Manual* (OECD and Eurostat 2005),[1] it operationalises innovation as an 'implemented change with an increased added value'[2] that replaces an existing product or production method.

3.2.1 Relevant elements of definition

The following elements of innovation are important to our project.

First, **innovation is adopted to add value**. In other words, an innovation would be introduced not only to 'do something different', but to 'do it better' (Middlehurst 2016).

Discussions surrounding the added-value aspect of innovation in the context of HEI raise important questions regarding the beneficiary of this added value (for example, does it provide added value for all HEI students or for only a subset of students, such as distance learners or under-represented learners?) and regarding the measure of this added-value (for example, in terms of better learning outcomes, better performance of HEIs on specific indicators, better societies). Innovation can be of various types, including a process which brings together various novel ideas in a way that impacts society, a new product or service, a new technology or a new idea.

Including added value in our definition of innovation is important, because innovation may provisionally disrupt the traditional organisation, system and process of an institution (a process called 'disruptive innovations' (Christensen & Eyring 2011)).[3] HEIs may mitigate the challenges posed by such disruptive innovation by forging partnerships with disruptive innovators (such as in the case of universities collaborating with private massive open online course (MOOC) providers).

[1] The *Oslo Manual* is an international source of guidelines for the collection and use of data on innovation activities in industry. More information and a pdf of the 3rd edition of the manual can be found on the OECD website. As of 25 May 2016: www.oecd.org/sti/oslomanual

[2] 'Added value' refers to 'an improvement or addition to something that makes it worth more.' (CDO 2016)

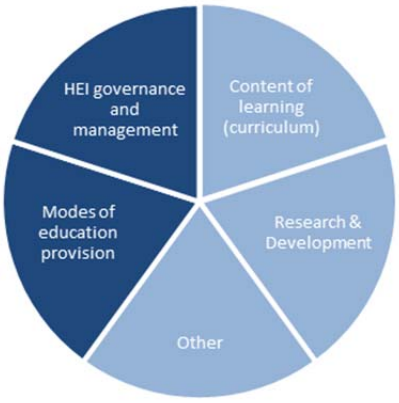
[3] Christensen and Eyring define disruptive innovation as a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up-market, eventually displacing established competitors. They have also applied this concept to higher education. More information is available on Clayton Christensen's website. As of 25 May 2016: http://www.claytonchristensen.com/key-concepts/#sthash.qKkxFfGq.dpuf

Alternatively, institutions must either adapt internally or risk being left behind by what may prove to be a paradigm shift in higher education provision (Bleed 2007; Barber et al. 2013). Furthermore, the GAIHE project conceives **of innovation in a context-specific manner**. In other words, an initiative in one HEI might be common practice and is thus not considered innovative, while if introduced in another HEI, it might bring about change and added value and thus represent innovation in that particular context.

Taking the context into account can also be interpreted in terms of time scale. An innovation over a short period may have a historical precedent if one looks at a longer time period.[4]

Finally, while innovation can be applied to a wide range of contexts in higher education, this project focuses specifically on innovations related to the **modes of higher education provision, and how the governance and management of higher education institutions** support or adapt to these innovations. The dark sections in Figure 2 illustrate the spheres of innovation in higher education which are the focus of the GAIHE project.

Figure 2: Spheres of innovation in higher education



[4] For example, the reform to make universities autonomous in France (which dates back to 2007) was in fact not the first time French universities gained autonomy. French universities were autonomous institutions when they were created in the 18th century. They then fell under a relatively strict state control under the Napoleonic era and gradually moved to back becoming more autonomous at the end of the 20th century and early 21st century (Musselin 2004). In fact, French universities were suppressed twice in history, after the French revolution, to be replaced by a system of 'lycées' and 'écoles', and following the Loi Fallou of 1850. They were reinstated in 1896. Another, more contemporary example includes distance learning, which has in fact been in existence for several decades, although admittedly on a different scale and traditionally under the remit of specialised institutions, such as the Open University in the UK and the Centre National de l'Évaluation à Distance (usually shortened to CNED) in France.

3.3 Three features of innovation in our project

Accordingly, the definition of innovation used in this report has the following three features:

- First, what is considered as innovative in one institutional context may have, in fact, been in place for some time in another. Hence, we define innovation locally, in terms of the particular context of each university. This is to respect the diverse histories and priorities under which each European higher education institution evolves, as well as to encourage a mutual exchange[5] of practices (rather than promote a one-size-fits-all approach), in line with the objectives of the Erasmus Multilateral project.

- Second, we also place a time horizon on our research and discuss only those innovations having occurred since 2008.[6]

- Third, we concentrate on identifying 'promising' rather than 'unequivocally innovative' practices. The promising practices were identified by the consortium because they are potentially transferable, have been considered in at least some contexts to add value and to be sustainable (and so might also add value and be sustainable elsewhere), and have the property of being institution-wide.

3.4 Innovation in modes of higher education provision

The term education provision refers to the manner in which education is provided, rather than to its content. We include the following categories in the term education provision:

- **Curriculum delivery**, which is defined as the way a course delivers its teaching content; this includes teaching methods, such as project-based, or problem-based learning (PBL) (e.g. Freeman 2012; Aditomo et al. 2013)

[5] The legal and financial capabilities of universities vary hugely across the European Union. Universities in certain systems evolve with a relatively large amount of autonomy, whereas others do not. Universities in countries such as the UK (or, more accurately, England, given the UK's devolved system), France and Latvia are free to set their academic structures, create legal entities, design the content of their courses, and have some discretion over their financial management, such as being able to borrow money, keep some surplus and sell buildings. However, the regulations in countries such as Sweden or Slovakia are more restrictive, with guidelines issued for academic structures, legal entities and financial management. It is also worth keeping in mind the significant differences in financial resources across higher education systems in Europe. For example, the public budget for higher education was 187 times higher in the UK than in Latvia in 2014, according to Eurydice (2008).

[6] The cut-off point of 2008 was chosen because it corresponds to a phase of stocktaking and further implementation, rather than broad reforms in higher education, following the London communiqué of 18 May 2007 in the Bologna process (European Ministers of Higher Education 2007).

- **Programme organisation**, which includes innovations in the administrative structuring of teaching, such as innovations in the organisation of teaching terms, or of module choices within a certain degree programme (e.g. Jones et al. 2012)

- **Technology-enriched learning**, which includes ICT-based innovations, such as MOOCs or 'intelligent' tutoring systems, which adapt their tutoring style and the curriculum to the learner's knowledge and learning style (e.g. Latham et al. 2012; Bayne & Ross 2014; Selingo 2013)

Generally, these three categories refer to changes in (1) how learning takes place, (2) the learning environment and (3) how those two are organised through institutions and policies. Chapter 3 outlines examples of innovations in modes of higher education provision in more detail, while Table 1 provides some illustrative examples of the three categories of innovation in education provision.

Table 1: Illustrative examples of innovations in higher education provision

Curriculum delivery (pedagogical approaches)	•New and prospective approaches linked with inquiry- and research-based learning, problem-, project-, or case-based learning; interdisciplinary- and transdisciplinary-based courses; courses designed on the basis of interconnection with the current company-driven needs
Programme organisation (administrative aspects of provision)	•Programme alignment with external communities of firms or research networks, flexibility in modeule choices across disciplines, online programme support, or international networks in research and education
Integration of technology in teaching and learning	•ICT employed in teaching and learning, such as flipped classrooms, online teaching, social media learning and Massive Online Open Courses (MOOCs)

The process of innovation can take place in a *top-down* fashion (from institutions to individuals) or in a *bottom-up* fashion (from individuals to institutions) (Olsen 2007) and is influenced by a broad spectrum of actors, including regional and local institutions; national governments and international organisations; university leaders,

administrators, academics and students; and external stakeholders (Fullan 1994; Olsen 2007).

3.5 Governance and management of higher education institutions

Governance and management refer to ways in which HEIs adjust their power allocation structures (governance) and day-to-day management processes. More precisely:

- **Governance** includes 'the framework in which an institution pursues its goals, objectives and policies in a coherent and co-ordinated manner' (Eurydice 2008, 12). In other words, governance pertains to the distribution of power across an institution. In its simplest and most traditional form, the university governance typically includes a university head and its office, an entity including academic representatives (such as the academic senate) and another body, which can include other stakeholders, i.e. students or community representatives (sometimes called a council). This governance model understandably has some variants across countries and institutions. For example, decisions at the University of Alicante are taken by a board of directors.

- **Management** includes the 'implementation of a set of objectives pursued by a higher education institution on the basis of established rules (Eurydice 2008, 12). More precisely, management pertains to the day-to-day running of the institution, which can cover such aspects as leadership styles, the type and number of relevant appointments or what support structures are in place to promote innovation.

The title of our project implies that governance and management adapt to innovations in higher education provision. This raises the question of the causal links among governance, management and innovations in higher education provision. This relationship between education provision, on the one hand, and governance and management, on the other, could occur in one of two ways. First, the university management and governance could have identified and magnified an existing initiative. For example, as we will cover in section 5, on project findings, the Vice-Chancellor for Teaching and Learning at Queen Mary identified an example of 'lecture capture' in one of the faculties and promoted its adoption institution-wide. In this case, the university management *adapted* to an innovation to support it. The relationship could, conversely, happen top-down. The governance body of an institution could decide to invest in managerial changes in order to stimulate innovation. For example, the senior leaders of the University of Alicante have invested in the creation of new vice chancellor positions in order to promote innovation. In this case, the intent is to have the innovation occur following the change in governance and management.

Changes in governance and management relate to two core aspects of the functioning of an institution:

- **Allocation of power:** The first aspect pertains to how power is allocated within an institution, from heads of the institution, to central bodies or heads of departments. In a traditional university, power tends to be concentrated around the faculties, with a fairly strong representative structure composed of an academic council and/or senate, and faculty members typically enjoying the privilege of regulating themselves. Understanding the allocation of power in an institution is important to define who decides on setting up innovations.

- **Boundaries of the institution**: In a traditional institution, teaching and learning remain allocated on the ground of the institution, with students having to be physically present to enjoy the benefits of their courses. Changes to the university challenge the traditional allocation of power and geographical boundaries of the institution. These shifting boundaries constitute a significant feature in the types of innovation our consortium covers and in how to manage and govern these innovations.

In relation to innovation in governance and management, the material gathered in this project allows us to:

- Gather evidence on those elements of management and governance which are perceived by members of the consortium, survey respondents and the wider literature to support innovation. This allows the project to highlight areas of management and governance that can be considered promising practices in fostering innovation and that could therefore be areas for HEIs to concentrate on and further test in their own settings

- Identify instances during which governance and management changes have occurred at the same time as certain innovations in order to understand the relationships between these two dimensions

3.6 Theoretical concepts relevant to university governance and management

Two theoretical concepts are relevant to understanding changes in governance and management: the entrepreneurial university and distributed leadership (also called shared leadership, and also referred to as participatory governance in some of our case studies).

3.6.1 Comparing the models of entrepreneurial university and distributed leadership

Table 2 summarises and compares the key elements of the concepts of entrepreneurial university and distributed leadership.

Table 2: Comparison of the concepts of entrepreneurial university and distributed leadership

	Entrepreneurial university	Distributed leadership
Allocation of power	Strong steering core	Devolution of power and responsibilities
Boundaries of the institution	Expanded developmental periphery	Opportunistic and strategic liaison with the outside environment

As Table 2 highlights, the concepts of entrepreneurial universities and distributed leadership allow us to compare the allocation of power within an institution. On the one hand, the concept of entrepreneurial university, coined by Burton Clark (1998), relies on the existence of a strong steering core and an expanded periphery. In other words, Clark assumed that a strong university president (and relationships with external stakeholders) was key to increase the university's entrepreneurial potential. On the other hand, the concept of distributed leadership assumes a more devolved power structure, where university staff members and academics are empowered to innovate (it also relies on a more opportunistic and strategic approach to liaising with the external environment). Comparing these two models allow us to think of the relative role of the university president or senior university leadership in comparison to other university actors in the governance and management process.

The concept of entrepreneurial universities has been at the heart of higher education research and has been taken up by various scholars (see, for example, OECD 1999; Chatterton & Goddard 2000; Holland 2001; Bennett et al. 2003; Etzkowitz 2004; Gunasekara 2004; Kirby 2005; Simkins 2005; Gibb & Hannon 2006; Yokoyama 2006; Bratianu & Stanciu 2010; Salamzadeh et al. 2011; Jones et al. 2012).

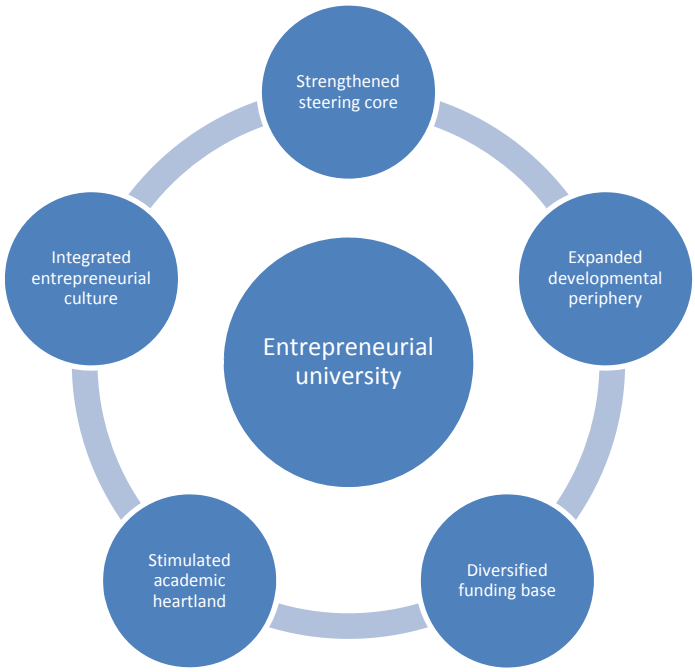
But the concept of entrepreneurial universities does not cover the leadership style of this institution extensively. For example, Middlehurst (2004), in her description of the changes in leadership that have occurred in the UK in the 1990s and early 2000s, described a shift in the allocation of power at universities. She explained that traditionally, UK universities pursued a liberal idea, where academic freedom was supreme, and which manifested itself through senior academics chairing the committees, with broad consultation and a relatively slow decisionmaking process. Middlehurst contrasted the liberal idea with the growing influence of an economic idea, where education was an economic resource. As a result, higher education fell increasingly under the remit of the government (at that time the Department for Education). This changing relation with the state impacted on the internal structure and operations of the university. Universities moved towards management, a streamlined committee system and a stronger executive management (see also Middlehurst & Kennie 1995).

We use the concept of distributed leadership to allow us to examine the notion of power allocation in an institution.[7] This concept highlights the fact that higher education, because it is of great complexity, cannot be the sole responsibility of only a small group of individuals (Bolden et al. 2009). By extension, university innovation should also be supported by the institution as a whole, as discussed in more detail below.

3.6.2 Presentation of the entrepreneurial university framework

This section provides further details on the elements of the entrepreneurial university framework. Table 2 and Figure 3 below summarise the key features of entrepreneurial universities.

Figure 3: Some key features associated with entrepreneurial universities



Source: Clark 1998

- A strengthened steering core aims to increase the capacity of the university to steer itself, including central managerial groups and academic departments. This capacity for self-management relies on having heads of universities with a mandate for change. According to Clark (1998, 2), European universities have traditionally had a 'remarkably weak capacity

[7] For a broad discussion on changes in governance and leadership and their impact, see Middlehurst (1991), Middlehurst and Kennie (1995) and Middlehurst (2004, 266–67).

to steer themselves', with most European universities still being under relatively strong state control at the time of his publication.

- An expanded developmental periphery encourages the creation of university units to link up the university with outside organisations or groups. These include units that are professionalised outreach offices and work on knowledge transfer, industrial contact, intellectual property, development, continuing education, fundraising and even alumni affairs. Reaching an expanded periphery also includes interdisciplinary, project-oriented research centres.

3.6.3 Presentation of the distributed leadership concept

The second concept puts the notion of leadership at the core of any change. We define leadership broadly as the ability to create a vision, to motivate and inspire people to engage with that vision, to manage its delivery and to coach and build a team to achieve the vision (Burns 1978; Bass 1985).

Different types of leadership exist. These include a command-and-control model of concentrated leadership; a supportive leadership, which involves providing guidance on the side; a rota system, where leaders are reallocated on a regular basis; or distributed leadership, which involves a devolution of power (Middlehurst 2016).

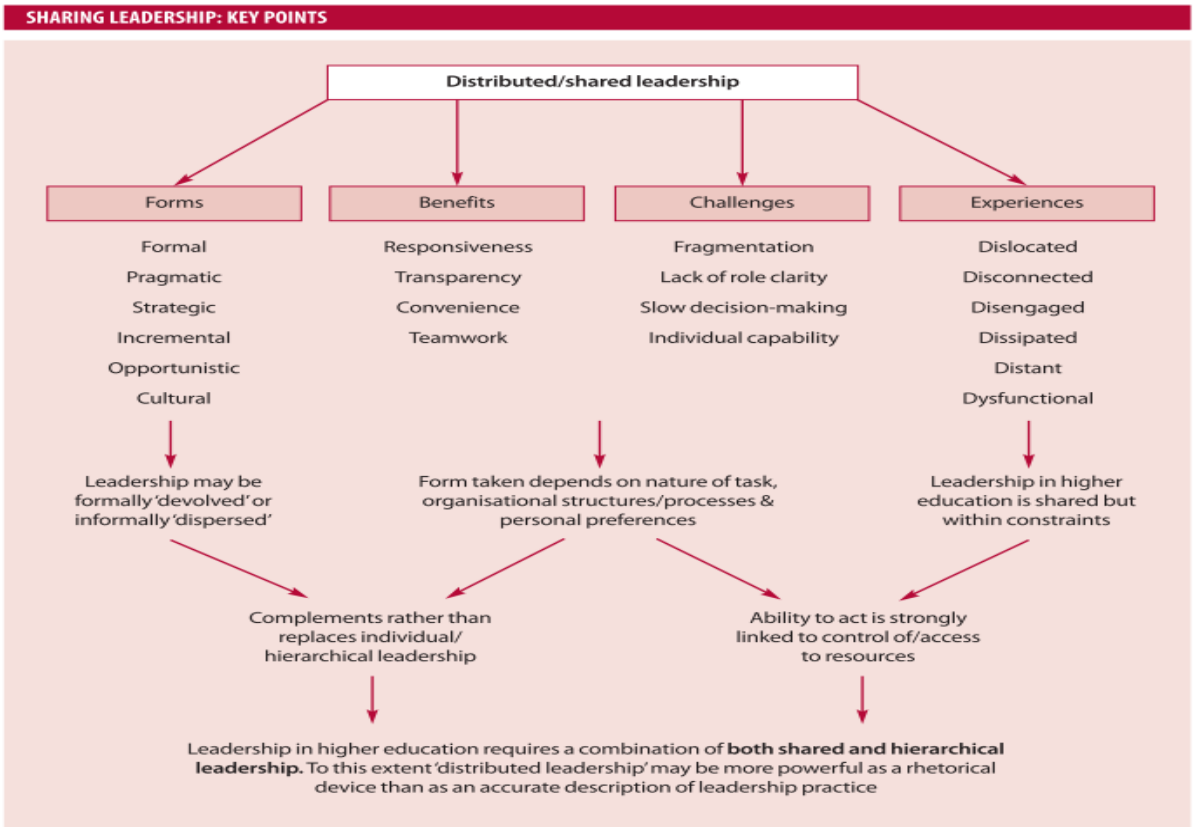
This project compares the notions of entrepreneurial universities and distributed leadership to conceptualise different ways for universities to organise their power system (Daumard 2001; Davies 2001; Bennett et al. 2003; Simkins 2005; Blackmore & Blackwell 2006; Bolden et al. 2009; Creanor 2011; Jones et al. 2012).

More precisely, this concept assumes that power would formally need to be developed – with a division of responsibilities and a shared style of leadership – for an institution to initiate change.

Distributed leadership also challenges the concept of traditional university boundaries. It assumes the creation of more links beyond the traditional boundaries of the institution in a strategic and opportunistic manner, by the appointment of external stakeholders to councils or committees within a university and by people being willing to take on greater responsibilities within and outside the HEI (for more information, see Viliani et al. 2014).

Figure 4 below summarises the key points of distributed leadership.

Figure 4: Key points of distributed leadership



Source: Bolden et al. 2008.

Bolden et al. (2008) show that distributed leadership takes different forms and that it can yield several advantages, including responsiveness or transparency, as well as challenges, such as fragmentation and a lack of role clarity. Finally, they show that leadership in higher education is shared, but within the constraints of the higher education environment, and that eventually the ability to act is also linked to the control of resources. Hence, they conclude that leadership in higher education relies on both shared and hierarchical leadership.

3.7 Relationship between leadership and innovation

Discussions with higher education representatives during the peer learning activities in Poitiers, France, and our case study examples suggest that the role of the leader is twofold regarding innovation:

- Leader as innovation 'generator'

In a first role, the leader acts as an innovation 'generator'. In this capacity, the leader comes up with an innovation. This type of leadership can occur across levels in a HEI, with innovations coming from students, faculty, academic staff, managers or more senior decisionmakers.

- Leader as innovation ‘magnifier’

In a second role, the leader takes on a role of innovation ‘magnifier’. In other words, the leader identifies an innovation and acts as a catalyst to support its implementation, sustainability and dissemination. This function is most relevant to leaders in senior managerial positions or heads of institutions.[8]

In summary, this chapter provided a critical review of the concept of innovation and outlined the concepts of education provision and governance and management. It also linked these dimensions in a project model. This model implies that the allocation of power in an institution’s governance and management is key to accomplishing change and innovation. Accordingly, the chapter then proceeded to cover existing theories relevant to the allocation of power and change in higher education institutions, namely, the seminal model of the entrepreneurial university (which assumes that power should be concentrated in a strong core to drive change) and distributed leadership (which assumes that power should be distributed across levels of the institution to accomplish change). Looking at these theories allowed us to think about the relationship between leadership and innovation and about the different functions of a leader in the innovative process.

The following chapter (Chapter 4) explains the methodology we used in this study.

[8] The peer exchange activities of this project provided the opportunity to discuss, and have a further exchange on, the role of leaders in innovation. See the dissemination report, mindmap 3, as an illustrative example (Florea & McGrath 2016).

4. Project methodology

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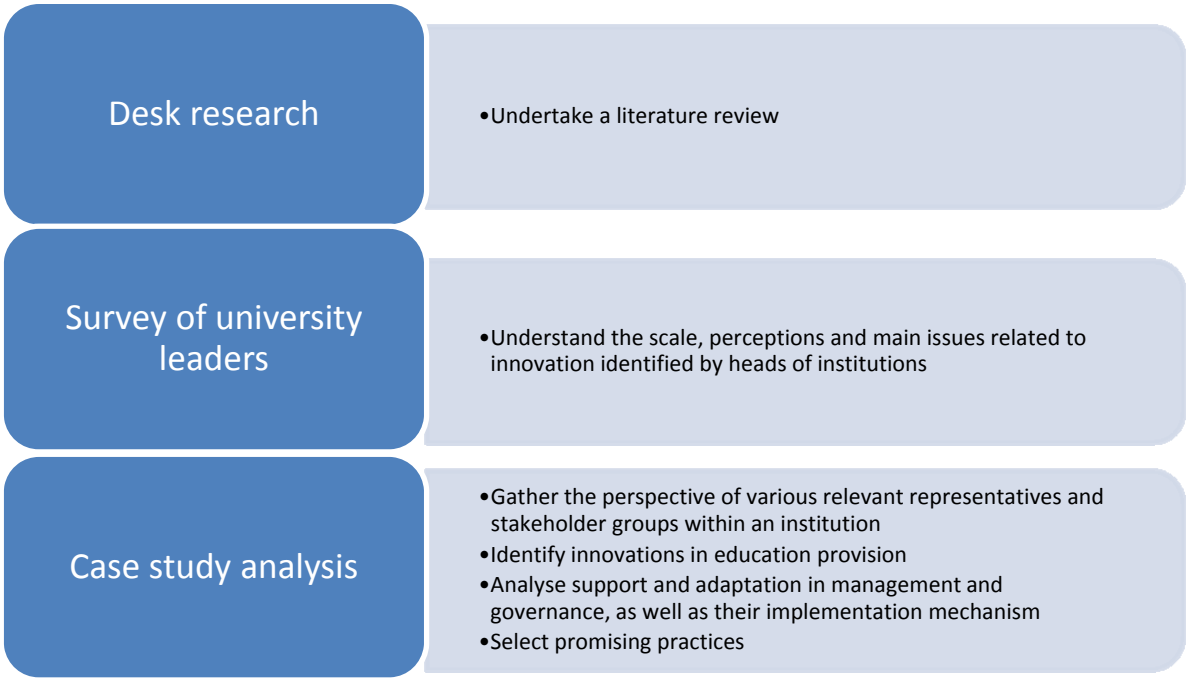
4.1 Overview

This section focuses on the detailed description of the methodological approach that we used throughout the implementation of the project, from October 2013 until March 2016 (with the final report submitted in June 2016).

First, the project concentrated on gathering data. Figure 5 summarises the steps of the data-gathering exercise.

Figure 5: The three research streams of the GAIHE project



As Figure 5 shows, the data-gathering exercise included extensive *desk research*, the development and implementation of an exploratory *online survey* disseminated across 47 higher education institution leaders or their representatives across 25 higher education institutions in 9 countries, and the production of *case studies* at 10 European HEIs in 5 countries that led to identification of *promising practices*.

The project also led to the production of other deliverables, including a literature review report (see Viliani et al., 2014), a survey report (see Gibson et al., 2014), a series of case study reports available online, the organisation of five workshops, the design of a peer learning activity and training course for university managers and teachers, a self-assessment tool to help institutions think about what they need to innovate, five consortium workshops, various dissemination activities, including

publications as well as conferences attendances, and a series of institutional visits as well as a website and other dissemination materials. These deliverables are summarised in the *Final Report – Public Part* for this project.

4.2 Desk research

4.2.1 Key questions

The literature review, also called desk research consisted of the following:

- **To start to address research question Q1** – What are some of the promising modes of education provision across Europe? – the literature review looked at what the innovations implemented in the provision of higher education are.
- **To address research question Q2** – How does the governance and management support these practices (or change to adapt to them)? What is the role of HEI governance and day-to-day management processes in establishing and regulating innovative modes of provision? – the literature review covered the concepts which are relevant to understanding changes in university governance and management.
- **In response to question Q3** – What are the main barriers and drivers for innovative education provisions? – the literature covered the main identified drivers and barriers.

4.2.2 Screening process

The scope of the review included material published between 1990 and 2014. These dates were selected in order to include the period before the reforms to higher education that started in 1999 with the Bologna process, up to the period when the report on the literature review (Viliani et al. 2014) was written. The timeline of the literature review was hence longer than the timeline used for further empirical material.[9] The literature review is available online on the project website, at http://www.he-governance-of-innovation.esen.education.fr/activities/documentation/

The team relied on:

- Leading academic journals on managerial issues in higher education, namely, *The Journal of Higher Education; Higher Education; Research in Higher Education; Higher Education Management; Higher Education Policy;* and *Higher Education Management and Policy*

[9] The Bologna process includes a series of ministerial agreements across European countries, which aim to increase transparency and the recognition of higher education qualifications across Europe, and which led to the creation of the European Higher Education Area as well as various reforms across its member states (see, for example, Hoareau 2011).

- Articles taken from the online CNRS platform (Biblio SHS), where some websites were consulted: Cairn, EbscoHost, JSTOR, ScienceDirect, SpringerLink, Persée and SAGE.

- Several journals, which were scanned for the investigation purposes: *Journal of Innovation Management; Journal of Entrepreneurship Education; Journal of Technology Transfer; Journal of Management Inquiry*, and *International Journal of Entrepreneurial Behaviour & Research*

- A review of the grey literature, including the European Commission communication *Rethinking Education: Investing in Skills for Better Socio-economic Outcomes* (EC 2012) and the report *Entrepreneurship Education: A guide for Educators* (EC 2014)

In order to identify literature in these sources that is relevant to the research questions outlined below, a key word search was undertaken using the terms listed in Box 1.

Box 1: Keywords used for the literature review

Innovation, local innovation system, governance, local change, regional innovation system, innovation in higher education, *entrepreneurship, entrepreneurial university, leadership and innovation, leadership and higher education, distributed leadership*. *policy, governance, leadership, management and entrepreneurialism*, *drivers of innovation*, *drivers & innovation, barriers & innovation, knowledge and technology transfer, partnerships and networks, funding and organisation (incentives), mobility and flexibility, communication and dissemination, assessment and accountability, professional development (including curriculum and pedagogical process, interdisciplinary practices), teaching and learning nexus (ICTs, e-learning)*

These terms relate to key dimensions of the study, e.g. innovation, governance, management or leadership. Search terms also included related relevant aspects, including the regional dimension (which was included because a feature of entrepreneurial universities is to have an outward-facing function) or technology transfers, which are closely related to innovation.

The consortium leader reviewed this literature review for quality assurance (QA).

4.2.3 Summary of key findings from the literature review

The findings from the literature review are published in a separate report (see Viliani et al. 2014). The following is a summary of the key findings. The literature review is divided into seven sections, described below. The rest of the report, and in particular section 5, ‘project findings’, covers some of the findings of the literature review, as summarised in Box 2 below.

Box 2: Summary of key findings from the literature review

Background

The literature review starts by providing some elements of background, and it then covers the challenges faced by higher education and the different levels of stakeholders involved in the process.

1. External challenges for higher education

This section of the review covers the challenges which pressure higher education to change. These factors include the rise of a global knowledge economy (Peters 2003), the appearance of mass education (Trow 1974), the decline in funding per student (Hazelkorn 2013), regionalisation of the economy (Chatterton & Goddard 2000; Holland 2001; Gunashekara 2004; Srinivas & Viljamaa 2008), and national innovation and competitiveness (Lee 1996; Shane 2004; Kwiek 2005).

2. Macro and meso level of influence in the innovation process

This part of the literature review covers the many different actors, at different levels, involved in change in higher education, including international organisations, universities and local actions within the university (Olsen 2007).

In answer to research question Q1 – what are some of the promising modes of education provision across Europe? – the literature review looks at what the innovations implemented in the provision of higher education are.

3. Innovative modes of higher education provision

The literature covers innovative modes of higher education provision. Innovations in higher education provision can be organised into three broad areas: programme organisation, curriculum delivery and technology-enriched learning.

The literature concentrates in particular on the most popular type of innovation, namely, innovations that rely on new technologies. Innovations relying on new technologies are very popular, but it is important that they be integrated in a teaching and learning strategy (Bayne & Ross 2014). Indeed, new technologies imply different ways to structure and organise learning. New technologies do not just support the user to carry out tasks. They make learning happen in a different way. Through new technologies, learning happens in a network rather than in the top-down manner of traditional lectures (Bayne & Ross 2014; Puentedura 2014).

In response to research question Q2 – how the governance and management support these practices (or change to adapt to them)? What is the role of HEI governance and day-to-day management processes in establishing and regulating innovative modes of provision? – the literature review then proceeds to review theoretical models of relevance to changes in governance and management.

4. Models of change in the governance and management of higher education institutions

Two models exist: the entrepreneurial university (Clark 1998) and distributed leadership (Bolden et al. 2009; Jones et al. 2012), as covered in section 3.5. These models essentially discuss where power, and the initiative for change, are allocated within an institution. The entrepreneurial university model assumes a strong core, i.e. that the university president is the main leader of change. The distributed leadership model assumes that change occurs bottom-up.

In response to research question Q3 – what are the main barriers and drivers for innovative education provisions? – the literature review covers the barriers and drivers to innovation.

5. Barriers to and drivers of the innovation process

Drivers include:

- A culture of creativity and openness (Brennan et al. 2014)
- Frequent re-evaluation (Brennan et al. 2014)
- Autonomous initiative of teaching staff (Flavin 2013)
- Development of a vision and support for innovation 'enablers' or early adopters (Freeman 2012; Brennan et al. 2014)
- Appreciation for the collaborative and adaptive nature of the information-sharing process in technology (Alexander 2006)

Barriers include:

- Lack of embeddedness of pedagogical approaches in technology (Flavin 2013)
- Lack of flexibility and adaptability in institutions (Istance 2011)
- Skills shortage (Freeman 2012; Jones et al. 2012)
- Student expectations (Jaldemark & Lindberg 2013)

In order to help us shape the project recommendations (research question Q4, Which recommendations can be issued regarding higher education management in innovative provision?), the review addressed the state of the literature regarding the role of governance and management in innovation.

6. How does the organisational layout of the institution influence educational provision?

- The review finds that most of the existing literature has either covered innovations in higher education provision or changes in governance and management.

- There is very little literature on the interplay between these elements. One piece of evidence includes an example of international learning influencing governance and management (Gosling et al. 2009).

4.2.4 Limitations

The literature review has three limitations. First, from a substantial point, the relationship between innovation and institutional adaptation has not been extensively covered by the literature. As highlighted in our project proposal, the extant literature has concentrated on either one or the other dimension of analysis. Second, the literature that has been published does not allow for conclusions to be drawn about whether there is a causal relationship between governance and management and innovation, or about the direction of that relationship. The literature mainly consists of descriptions or case studies of particular examples of innovation and change. Third, the literature search was conducted until 2014, so any material issued from 2015 onward has not been included.

4.3 The university leadership survey

The survey aimed to gather the views of HEI leaders on each of the four research questions addressed by this study. The survey questionnaire included 29 separate questions, administered through SurveyMonkey and made available via a web link. The questionnaire is available in Annex 14.

4.3.1 Timing of the survey and reporting

The initial draft questionnaire[10] was developed in March 2014 and piloted with partner institutions. Based on feedback received from five partners, appropriate amendments were made, and the survey was finalised by the end of March 2014. The final survey was circulated through several iterations: on 1 April, 8 April, 22 April and 29 April 2014, with an initial deadline set (for 18 April), which was (due to a low response rate) subsequently extended to 2 May.

A member of the consortium, the Dublin Institute of Technology, presented the survey frequency analysis in its Report on 'Survey on the Governance and Adaptation to Innovative Modes of Higher Education Provision July 2014' (Gibson et al. 2014). The survey report is available on the website of the GAIHE project as well as on the website of the Dublin Institute of Technology.

[10] The questionnaire was designed under the leadership of Dublin Institute of Technology (Barry Colfer, Andrew Gibson, Ellen Hazelkorn), with the cooperation of the University of Maribor (Marko Marhl and Jelena Krivograd), Comenius University in Bratislava (Lubica Bajzikova and Anna Lasakova), RAND Europe (Cecile McGrath) and the University of Maastricht (Jo Ritzen).

4.3.2 Survey sections

The survey is divided into five sections (see survey report by Gibson et al. 2014):

1. *Innovations in the modes of higher education provision* – differentiated into three categories: programme organisation, curriculum delivery and technology-enriched learning environment – in order to help us address **research question Q1** (presented in section 2.4)

2. *Factors linked with innovation* in higher education provision – more specifically, drivers of and barriers to innovation in higher education (HE), and the stakeholders involved – in order to help us address **research question Q3**

3. *The impact of innovation* – more specifically, the consequences of innovation in higher education with regards to governance and organisational structure of universities, as well as working conditions or expectations of academic staff at universities – in order to help us address **research question Q2**

4. *Future challenges* – namely, perceptions of individual respondents and their attitudes towards change and innovation in higher education, together with open-ended questions mapping opinions on how to foster innovation in higher education provision and any changes needed in the governance or organisational structure to support innovation in education provision at their universities – in order to help us address **research question Q4**

5. *Institutional profile* – with seven main items: name and country of the institution, date of establishment, type of institution, range of degrees offered, funding scheme of the institution, and contact information for the person who was responsible for filling in the questionnaire – to obtain general information for further analysis

4.3.3 Survey sample

The survey was an elite survey in the sense that it was circulated to university leaders (university presidents and vice chancellors) and their offices.

The intended sample consisted of 47 HEIs based in 9 countries (Austria, France, Ireland, Latvia, the Netherlands, Romania, Slovakia, Slovenia and Spain). In total, 65 individuals were invited to take part in the survey across these 47 institutions.

The institutions included in the survey were selected by each consortium partner, based on their own country expertise.[11]

The project team chose to concentrate on a select group of institutions out of these 47, given the elite nature of the survey (to university heads). Using a small sample allowed each consortium partner to approach the offices of the heads of the institution in order to introduce the survey (in the hope that this would increase the response rate).

The selection of the sample aimed to cover HEIs that represented variation in relation to the following features:

- Date of establishment
- Institution type (comprising public, private and specialised establishments as well as research- and teaching-intensive entities)
- Student populations targeted (focusing on undergraduate students, post-graduate students, and both undergraduate and post-graduate students)
- Geographical balance (including institutions from different regions in the selected countries)

Table 3 summarises the number of responding individuals and the number of responding institutions.

Table 3: Number of individual and institutional responses

	Invited	Responded (and provided personal details)	Response rate
Individual	65	47	72
Institution	47	25	53

Table 3 shows that the responses came from 25 institutions, represented by 47 individuals. The institutional response rate was around 53 per cent, and the individual response rate was 72 per cent. Some individuals chose to remain anonymous and therefore did not to list their institution, and the institutional response rate in the table above is correspondingly deflated.

[11] With the exception of the UK, represented by RAND Europe, which joined at a later point.

In some cases, multiple individuals from a single institution responded to the survey because the invitation was sent to more than one person in some institutions.

4.3.4 Profile of surveyed institutions

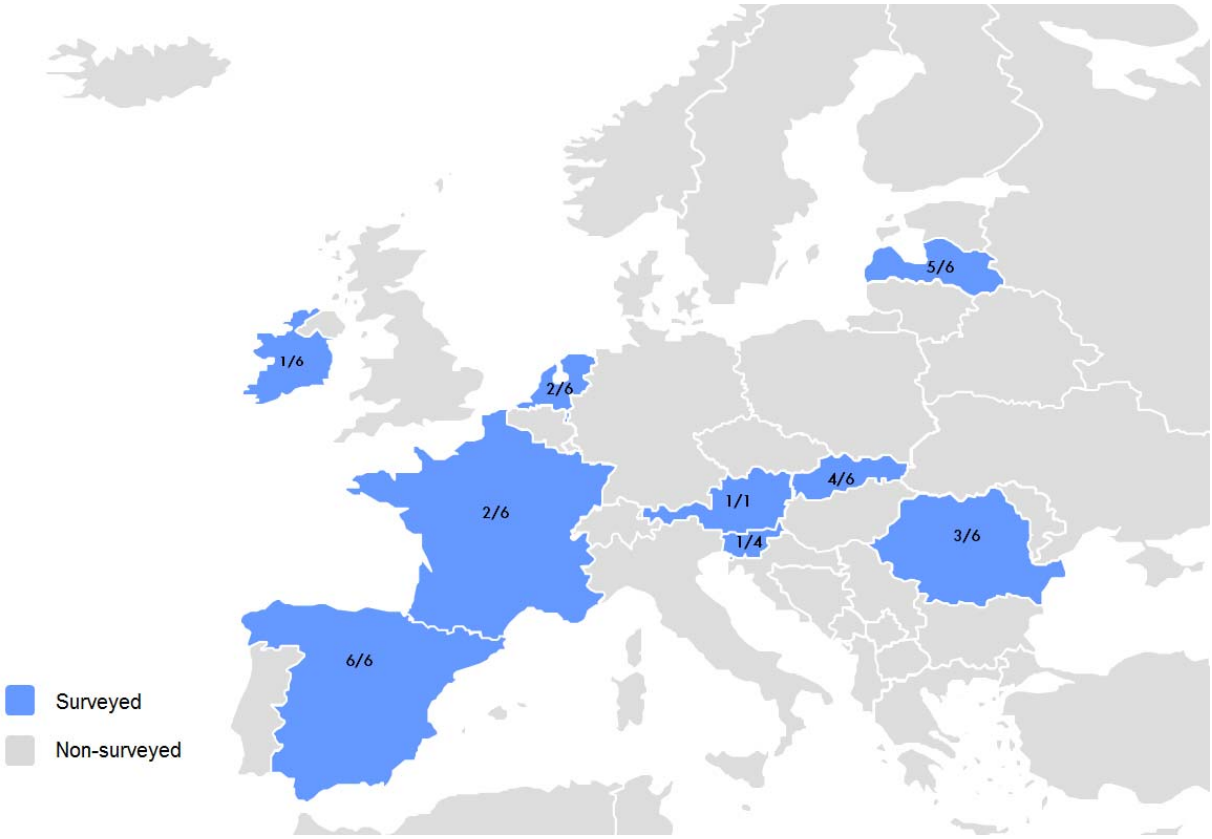
To assess the representativeness and generalisability of the survey findings, the research team has conducted a brief analysis of the surveyed institutions.

This analysis compares two groups of respondents:

- Responding institutions: Institutions which have responded to the survey and provided identifying information.
- Non-responding and anonymous institutions: Institutions which may have responded to the survey but which did not provide identifying information and institutions which did not respond to the survey.

This analysis started by describing the location of universities, as indicated in Figure 6.

Figure 6: Distribution and number of responding universities by country



Note: Survey responses to 'country' section, N=25

Figure 6 illustrates that, although there are country-level differences, there is no significant difference in the level of responses across Central and Eastern Europe and Western Europe (the difference is 1); 13 out of an invited total of 22 Central and

Eastern European institutions replied to the survey, and 12 out of an invited total of 25 Western European institutions did so (Gibson et al. 2014, 14).

Please also note that 29 out of 47 respondents answered the question regarding their country of origin. Figure 6 also shows that at least 1 institution from each of the 9 invited countries responded to the survey.

In addition to their geographical distribution, the study team examined the date of establishment of institutions in order to determine any differences in characteristics between responding and non-responding institutions.

Figure 7 provides a profile of institution by date of creation, dividing institutions into those created up to and including 1969 (pre-1970) and between 1970-2014. This cut-off point corresponds to a turning point for European universities to adapt to mass enrolment, the pressure for universal access and the growing concept of learning society (Trow 1990, 3).

Figure 7: Responding and non-responding institutions by date of establishment (N=47)

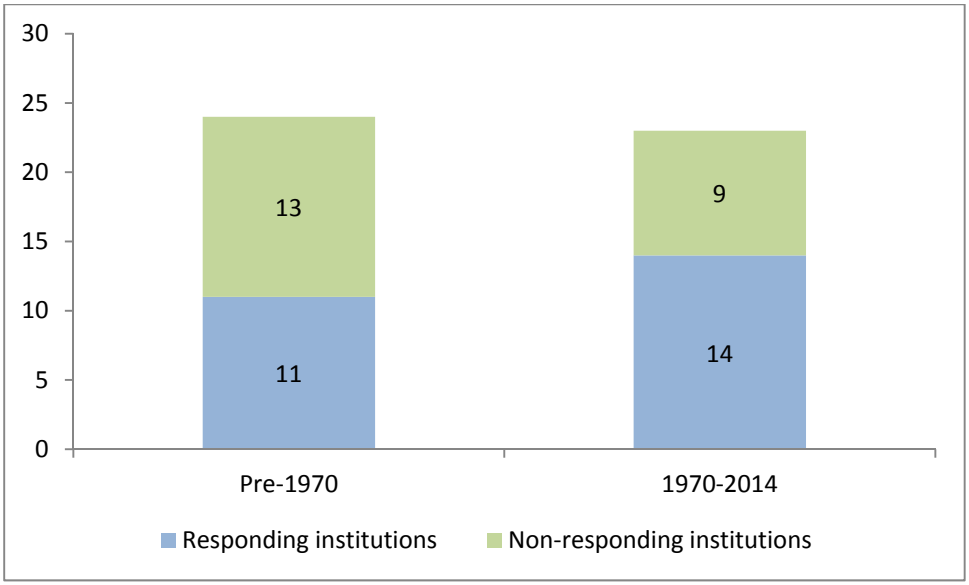


Figure 7 shows that institutions that replied to the survey were slightly more likely to have been set up after 1969, with 14 institutions set up in or after 1970 and 11 set up before that year.

Figure 8 below compares responding and non-responding institutions by type of institution. Figure 8 uses three categories of institutions, which reflect the differentiation applied in many higher education systems:

- Classical academic institutions, which are typically research-focused 'traditional' universities

- Vocational institutions, which tend to have a strong technical focus, such as the Fachochschulen in Germany or the hogescholen in the Netherlands (which are universities of applied sciences)
- Business or specialised institutions, which includes schools teaching a particular subject or specialised in one area, such as business schools

Figure 8: Responding and non-responding institutions by type (N=47)

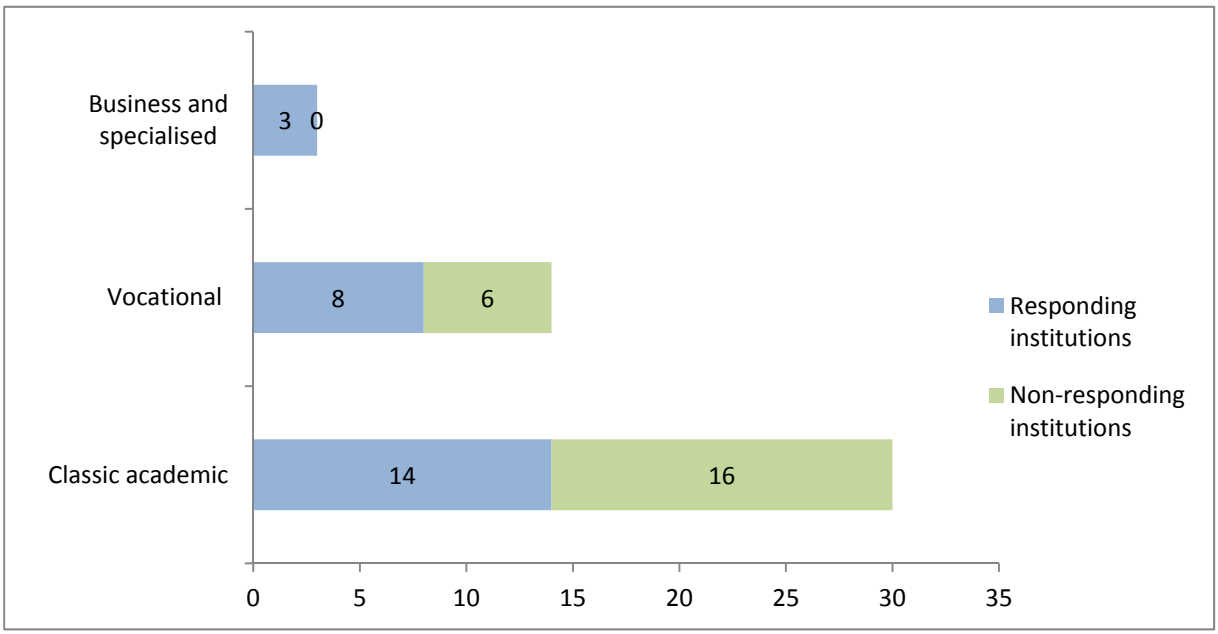


Figure 8 indicates that most institutions are classical academic (as opposed to more vocational or technical) across the response and non-response groups (with 14 and 16 institutions in this category, respectively).

The study team finally compared responding institutions and non-responding institutions according to their position on the Academic Ranking of World Universities (ARWU 2015), as illustrated in Figure 9.[12]

[12] The ARWU is an international ranking of the top universities worldwide; it was last updated 15 August 2015. The ARWU is calculated along a number of key metrics, including quality of education, faculty, per-capita performance and research outputs (ARWU 2015).

Figure 9: ARWU ranking of responding and non-responding universities (N=47)

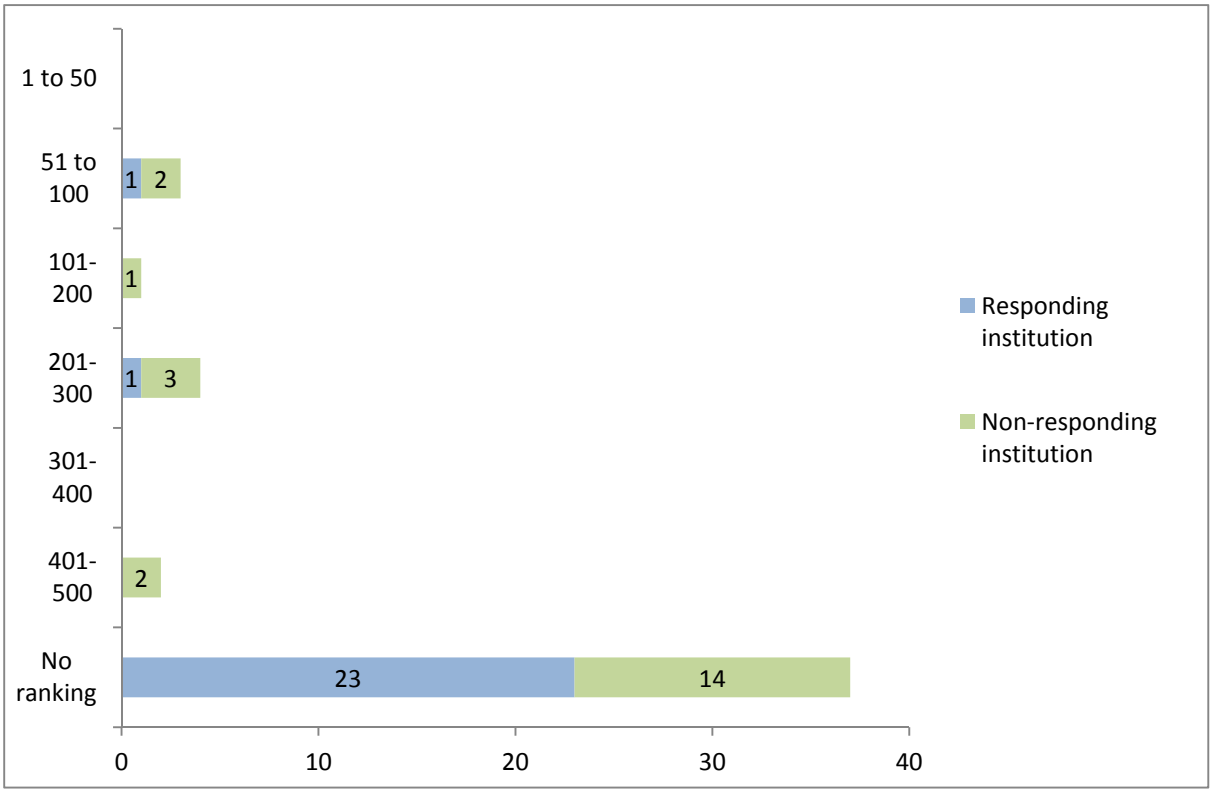


Figure 9 shows that institutions who replied to the survey were also four times less likely to be ranked in the Academic Ranking of World Universities, released by the University of Shanghai. The ARWU classifies universities worldwide based on their research performance. Eight non-responding institutions were ranked in the ARWU classification, in comparison to two responding institutions.[13]

To sum up, responding institutions were more likely to be more recent institutions, which were not ranked as part of the ARWU.

4.4 Case studies methodology

The objective of the case studies was to gather the views of staff members at various levels of a selection of universities – including university heads or their offices, relevant senior management representatives, faculty, staff and student representatives – to identify examples of innovations, changes in governance and

[13] The University of Shanghai ranks among the top 500 universities in the world, which constitute about 2 per cent of the total number of universities in the world. As of July 2015, there were 23,729 universities in the world (Ranking Web of Universities 2015).

management, as well as the mechanisms through which these innovations and changes were adopted as defined by the respondents. The institutions covered by the case studies are listed in Table 4 below.

The case studies generated a *list of promising practices*, which were considered by these staff members and members of the consortium to be or have potential to be *sustainable, transferable* and *have added value*, and enable the HEIs to raise the institution's innovative potential.

4.4.1 Objects of analysis in the case study

The case studies provided the research team with the opportunity to have an in-depth look at set innovations in certain HEIs and at the dynamics and changes having led to these innovations.

More precisely, the case study research focused on the following issues:[14]

- Innovations in higher education that add value – in response to **research question Q1 (listed in section 2.4)**
- Changes in the HEI's governance, management, organisational structures and human resource management that promote fast and effective implementation of innovations – in response to **research question Q2**
- Influences of innovation in education on the internal environment at HEIs; in other words, suitable organisational structures and governance models, and feasible management practices with regards to innovative modes of higher education provision – in response to **research question Q2**
- Promising practices regarding human resource management processes (recruitment, selection, compensation, training, development, performance management, talent management, etc.) that help to create an innovative organisational culture in HEIs – in response to **research questions Q2**
- Main obstacles (deriving both from the internal and the external environment of HEIs) faced by HEIs when dealing with implementation and the utilisation of innovation and the ways in which HEIs can effectively combat them – in response to **research question Q3**

[14] Case study research questions were designed to complement the survey questions in regards to forms of innovation, to barriers and drivers of innovation, and to future directions and challenges that respondents in both research strands stressed as being the most significant.

- Challenges for HEIs for improvements in order to become, in the next 5–6 years, more innovative or an innovation leader on the global or EU levels – to help us formulate answers to **research question Q4**

- The most important innovations in education provision or changes in governance in the future according to respondents – to help us formulate answers to **research question Q4**

4.4.2 Selected case study institutions

Table 4 details the institutions selected for the case study analysis.

Table 4: Institutions selected for the case study analysis

Name	Date of establishment	Institutional type		City	Country	Types of undergrad. / post grad. degrees offered	No. of interviews & focus groups conducted
		Teaching-Research or Specialist	Academic or vocational				
ESSEC Business School	1945–69	Specialist	Academic	Paris	France	All [1]	8
University of Strasbourg	1850–99	Teaching	Academic	Strasbourg	France	All	4
University of Latvia	1919	Research-intensive	Academic	Riga	Latvia	All	7
Stockholm School of Economics in Riga	2000	Specialist	I–Vocational	Riga	Latvia	BSc, Ex MBA	8
Comenius University in Bratislava	1919	Teaching	Academic	Bratislava	Slovakia	All	13
University of Ss. Cyril and Methodius	1997	Teaching	Academic	Trnava	Slovakia	All	13
University of Salamanca	1218	Research-intensive	Academic	Salamanca	Spain	All	9
University of Alicante	1979	Research-intensive	Academic	Alicante	Spain	All	11
Queen Mary, University of London	1887	Research-intensive	Academic	London	UK	All	10
Anglia Ruskin University	1992	Research-intensive	Academic	Cambridge	UK	All	5

Note: 'All' includes bachelor, master and PhD

The case studies were carried out by members of the consortium, who were given the option to look at their own institution, or at another institution within their country

that was not a member of the consortium. Each consortium member suggested a case study for his or her country, and the final list of case studies was selected following review and deliberation by consortium members. Out of the 10 case studies, 6 looked at consortium members, and 4 were external.

The case study institutions also include different geographies, traditions, type of institutions, areas of specialisation. They offer varying degrees and include a balance of consortium and non-consortium entities (see Table 4).

4.4.3 Data-gathering method

The case study relied on interviews and focus groups, as well as relevant documents produced by the institutions (when available and provided during interviews and focus groups). Finally, the research team also reviewed the strategic plans of institutions which had made these plans publicly available online (7 institutions out of 10).

The consortium partnership submitted a questionnaire template that it used to conduct the research, which served as a progress report, a written case study report, as well as a one-page summary. The templates were used to disseminate the case study findings, which are available on the GAIHE project website, at http://www.he-governance-of-innovation.esen.education.fr/activities/documentation/cs/

The case studies were undertaken in the Spring and Summer of 2014. The case study reports were peer reviewed by the GAIHE team to ensure consistency and were finished during the period January–March 2015.

4.4.4 Case study protocol and template

Members of the case study research team followed a case study protocol written by the case study team and agreed on by the consortium, and they wrote up the case studies following the case study template (case study reports based on these templates are available in annexes 1–10).

4.5 Identifying promising practices

One of the main objectives of the case studies was to identify a set of promising practices in innovation within HEI. The research team prefers the terminology ‘promising practice’ to the more commonly used term ‘best practice’ because it implies that these practices could be interesting to a broader set of institutions (what the terminology of ‘promising’ would suggest), rather than normatively superior as such (as the word ‘best’ would hint at).

We identified three key characteristics to help us identify a promising practice. First, the promising practice in innovation needs to add value to the institution and its users, following the definition of innovation in section 3.2. Second, the promising practice needs to be adaptable to different contexts – a property that we call

transferability. Third, the practice needs to be able to last over time, i.e. be sustainable (see Table 5).[15]

In line with the OECD's *Oslo Manual* (OECD and Eurostat 2005), innovation is defined as an implemented change with an increased added value, replacing an existing product or production method.

Table 5: Delineation of three key aspects of potential promising practices

Key aspect	Explanation
A promising practice **adds value**	The practice provides something 'more' or 'better'.
A promising practice **is transferable**	The practice can be replicated to other contexts or settings with ease.
A promising practice **is sustainable**	The practice is durable, is resilient, and survives within the setting in spite of turbulence or changes.

The research team also devised 19 subcriteria to identify a promising practice, based on Table 6 below. These criteria informed the judgement and deliberations of the consortium partnership on the set of practices which came out of the case studies.

Table 6: Criteria used to identify promising practices

1. A promising practice adds value if:	1.1. The promising practice contributes to diversification of the current modes of education provision at the HEI. 1.2. The promising practice is able to deliver intended benefits to the stakeholders. 1.3. The promising practice helps to promote productive cooperation and synergic relations among the three main institutional spheres: the university, industry/business and government.

[15] The use of the term 'promising practice' is inspired by the method for the delineation of promising practices in the European Platform for Investing in Children (EPIC) project, run by RAND Europe and funded by the European Commission. For further information on the definition of the term in the EPIC project, see the EPIC website. As of 25 May 2016: http://europa.eu/epic/practices-that-work/glossary/index_en.htm

	1.4. The promising practice empowers one or more of the HEI's stakeholders. 1.5. The promising practice promotes new learning. 1.6. The promising practice promotes life-long learning. 1.7. The promising practice enables easy access to knowledge. 1.8. The promising practice fosters the ICT-related skills of graduates. 1.9. The promising practice ensures students have more experience or practical knowledge.
2. A promising practice is **transferable** if:	2.1. The promising practice has value for money. 2.2. The promising practice is in line with legal regulations in the country where the HEI operates. 2.3. The promising practice is in line with the ethical requirements that are applied in the culture where the HEI operates. 2.4. The promising practice is adaptable to some adjustments in order to meet the specific cultural, local, institutional, etc. contexts without losing its original character.
3. A promising practice is **sustainable** if:	3.1. The promising practice shows a tendency or potential to evolve into a standard operating procedure within the education provision at the HEI. 3.2. The promising practice is capable of maintaining its underlying idea, character, structure and practicality in spite of organisational or managerial disruptions at the HEI. 3.3. The promising practice is supported by the HEI's management. 3.4. The promising practice mobilises the HEI's infrastructures as well as the knowledge, skills and abilities of the HEI's employees (the academic/administrative staff).

	3.5. The promising practice is coherent with the HEI's vision and strategy. 3.6. The promising practice has some level of buy-in from the leadership of the institution.

The methodology to identify promising practices was based on an interactive process consisting of the following two steps:

- *Content analysis of the case studies*. Country teams used their expertise on HEIs to single out two to four examples of promising practices for each case study. It is worth noting that several practices were listed within one given case study (because the project looked at several dimensions of higher education provision). Country teams relied on the criteria identified above to make their choices.
- *Consortium deliberation*. The consortium deliberated this shortlist during a meeting in Salamanca, using members' own expertise and applying the criteria identified in Table 6 above (26 June 2015). From this, the members of the consortium selected a final list of five promising practices.

(For the results, see section 5.2.4, 'Examples of promising practices'.)

4.6 Methodological limitations

The usability and relevance of the GAIHE survey and case studies are narrowed to some extent by several limitations.

4.6.1 Inferences in small-N studies

The choice of a small-N study (N stands for the number of respondents), including 47 responses for the elite survey and 10 case studies, as much as it was designed to facilitate communication across the consortium partners and institutions studied, and as much as every effort was made to achieve a varied sample of institutions, means that caution needs to be exercised when generalising the results of the study to a broader set of institutions. The findings of the study are representative of the institutions included in this project and should not be used to make broader inferences.

4.6.2 Diversity in the sample of higher education institutions

The consortium partner institutions and the sample of HEIs were very diverse.

Indeed, the HEIs in the research represented various traditions in education, study programmes and types of HE institutions. Some of them were established long ago (University of Salamanca, University of Strasbourg, or Queen Mary, which is part of University of London), and others resulted from the independence movements and related cultural renaissance of nations (Comenius University in Bratislava or University of Latvia), still others are tied to the modern history of HE (University of Ss. Cyril and Methodius in Trnava or the Latvian branch of the Stockholm School of Economics, in Riga).

This diversity fulfilled the objective of increasing mutual exchange and understanding promoted by the Erasmus Multilateral programme. Such diversity was also intentional in order to acquire diverse perspectives across the European Union.

This means that findings needed to be interpreted within the context of each institution.

4.6.3 Using perception to select promising practices

The process of selection of the promising practices, although it relied on the long list of criteria presented above, was largely the result of perceptions and judgement (rather than quantitative metrics, for example, of the number of years the practice has been in place or the number of institutions having adopted it).

We have relied on the opinions of the case study interviewees to let us know which innovation they considered ‘promising’. We have also relied on the judgement of the case study team and consortium partnership as a whole during discussions (particularly during the consortium workshop in Salamanca on 26 June 2015).

Using this perception-based approach allowed us to exchange and discuss experiences across our consortium partnership. Further research could map these practices to other quantitative indicators.

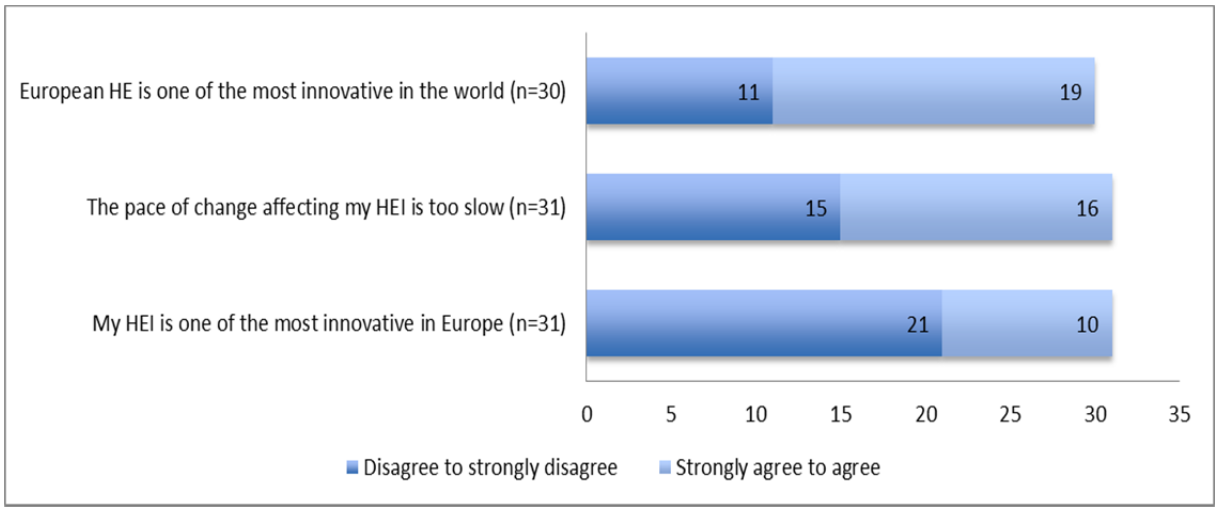
5. Project findings

This section summarises our project results. It starts by framing the results within the context of survey respondents' views on innovation in higher education in Europe (5.1). It then describes innovations in terms of higher education provision (5.2), before describing the suitable support from governance and management (5.3).

5.1 Perceptions about innovation in European higher education institutions

Before delving in to the changes in higher education provision, it is worth contextualising the topic in terms of the perceptions of the survey respondents of innovation in Europe. Figure 10, drawn from the survey report (Gibson et al. 2014), provides an overview of these perceptions.

Figure 10: Change and innovation in higher education according to survey respondents



Note: 'n' indicates the number of respondents to each question.

Figure 10 summarises the results of a question asking respondents about their perception of change and innovation in HEI. More than half of the participants perceived European HE to be one of the most innovative in the world: 19 out of the 30 respondents agreed with this statement. Contrasting with this, most respondents had a negative outlook when it came to their own institutions and innovation: about half (16 of 31 respondents) considered the pace of change affecting their HEI to be too slow, and more than half, 19 of 30 respondents, did not think their institution was

among the most innovative HEIs in Europe. In addition, interviewees in five HEIs mentioned difficulties in achieving innovation.[16]

The somewhat paradoxical perception of innovation in higher education also suggests that higher education institutions may need more support to know how to adapt to create innovation and what works.

5.2 Main innovations in higher education provision identified in participating institutions

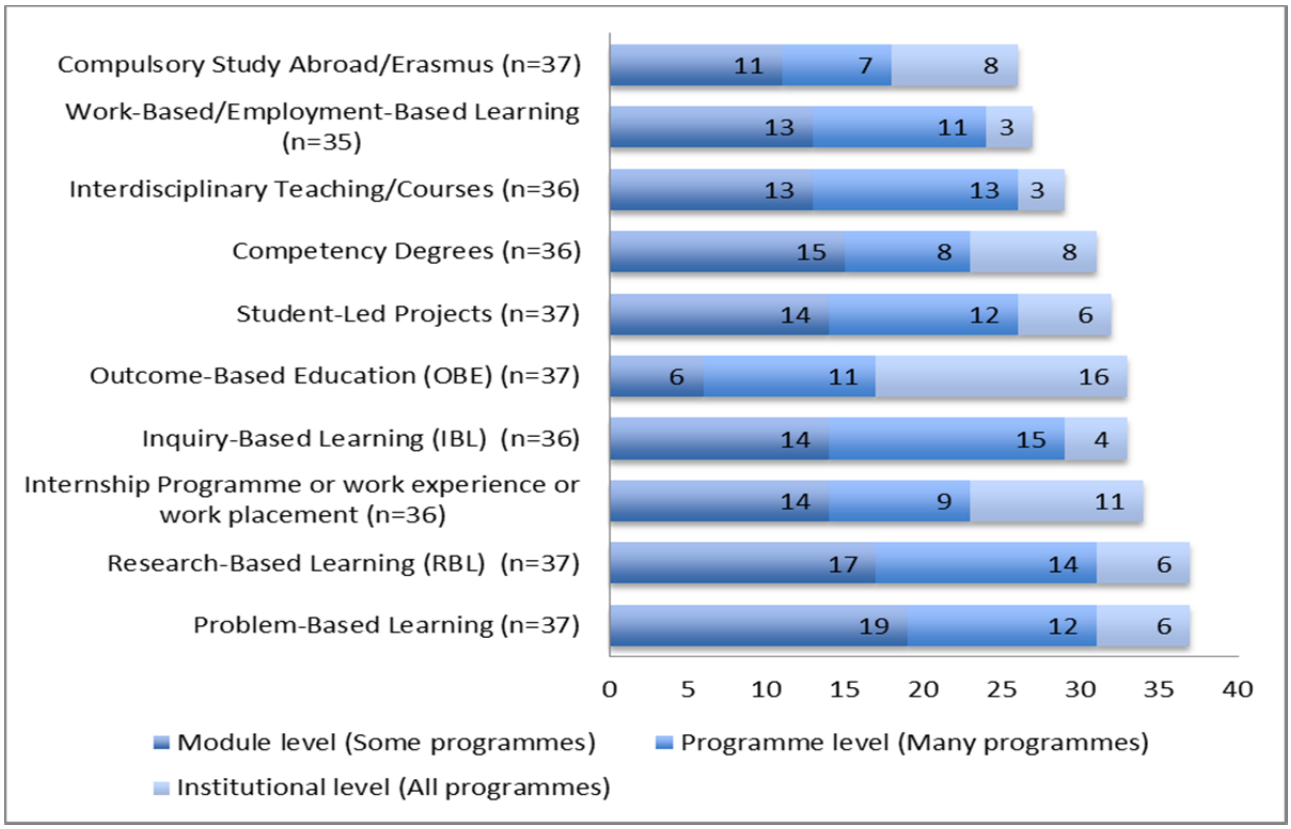
This section lays down the main innovations in higher education provision identified during the project. It then provides a description of the promising practices identified by our consortium.

5.2.1 Curriculum delivery

Figure 11 and Table 7 summarise the innovations in curriculum delivery identified, respectively, by the survey respondents and case study analysis. Full details of these practices are found in the annexes.

[16] These HEIs were the University of Latvia; Comenius University of Bratislava; University of Ss. Cyril and Methodius in Trnava; Queen Mary, University of London; and Anglia Ruskin University.

Figure 11: Innovations in curriculum delivery according to survey respondents



Survey question: What innovations in education provision has your HEI introduced in terms of curriculum delivery?

Table 7: Curriculum delivery innovations identified in the case studies

Country	University	Example of innovation[17]
France	ESSEC Business School (Annex 1)	• Case-based learning via 'student social entrepreneurship competitions'
		• Promotion of social entrepreneurship among graduates via Antropia, the school's social entrepreneurship centre of expertise
		• Innovative Product Creation (Création d'un Produit Innovant – CPI) programme to make students and professors create innovative products
	University of Strasbourg	• Emphasis on skills-development teaching via Program Approach (Approche-Programme – a training for professors in order to develop a skills-centred approach)

[17] For more detailed information about these innovations, please see the case study summaries, as reported in Annexes 1–10.

Country	University	Example of innovation[17]
	(Annex 2)	• Evaluation of courses by students
Latvia	University of Latvia (Annex 3)	• Tailoring courses to students' skills and motivation (e.g. via the 'excellence in studies' track, where teachers can include in their existing courses something additional to satisfy the learning needs of highly motivated students)
		• Evaluation of courses by students
	Stockholm School of Economics in Riga (Annex 4)	• Recognising MOOCs as electives (up to 30 per cent of total electives)
		• Interactive game for entrepreneurship
		• Student association in charge of course evaluations
Slovakia	Comenius University in Bratislava (Annex 5)	• Simulator laboratory
		• Promotion of international education programmes
		• Project-based learning
		• More attention to practical experiences through the consulting and development centre Managerial
		• Link science to practice, engaging students in solving specific commercial projects
		• Professional workshops and seminars for students focusing on practice, clinical education, internships
	University of Ss. Cyril and Methodius in Trnava (Annex 6)	• Promotion of internship periods abroad; emphasis on linking theory to practice
		• 'Week of science and technology' (University of Ss. Cyril and Methodius in Trnava), which includes lectures and workshops by practitioners
Spain	University of Alicante (Annex 7)	• Promotion of collaborative working teams for better learning via the Redes (Networking) programme
	University of Salamanca (Annex 8)	• Substituting frontal lectures with seminars and workshops
		• More tutoring and independent work by students
		• More internship programmes and practical experiences
UK	Anglia Ruskin University (Annex 9)	• More emphasis on matching academic knowledge and practical experience (e.g. Degrees at Work programme)
	Queen Mary, University of London (Annex 10)	• Give students an real-life/applicable context for learning (chemistry department)
		• Expose students to clinical medicine (Faculty of Medicine and Dentistry)
		• Problem-based and case-based learning (Faculty of Medicine and Dentistry)

Figure 11 and Table 7 show that **inquiry-based models** were implemented by 33 out of 36 respondents in their HEI at module, programme or institutional level. In

addition, problem-based,[18] and research-based learning, are some of the most commonly reported innovations within participating institutions.

Inquiry-based learning is a teaching method that encourages learning through the generation of questions. Inquiry-based models are student-centred; the trigger for learning comes from students asking questions.[19]

The examples of inquiry-based learning, described in Figure 12Figure 11 and Table 7, tended to be implemented at the module or programme levels for a majority of cases (31 out of 37 respondents in each category). For example, the ESSEC Business School makes use of case-based learning and the Stockholm School of Economics in Riga has introduced an interactive game on how to develop a business, whereas Salamanca University has placed more importance on the students' independent work. The increasing role of skill-based practices, as is the case at the University of Latvia, is also noteworthy. Project-based and case-based learning were implemented at Queen Mary, University of London, and at Comenius University. A characteristic of these models is that although content remains important, a stronger emphasis is placed on process and method (Adimoto et al. 2013).

Outcome-based education and internships or work experiences are the categories which are the most likely to be implemented: 34 out of 37 respondents to the survey said that internship or work programmes have been implemented by their HEIs for at least some modules. For example, Queen Mary, University of London has included compulsory working shifts with the London Air Ambulance Service for undergraduate medical students (Annex 10), Comenius University has involved students in solving specific commercial projects (Annex 5), and, as mentioned in the previous section, Anglia Ruskin University has provided those in the workplace with the opportunity to engage in learning at the diploma and degree levels through its special programme Degrees at Work.

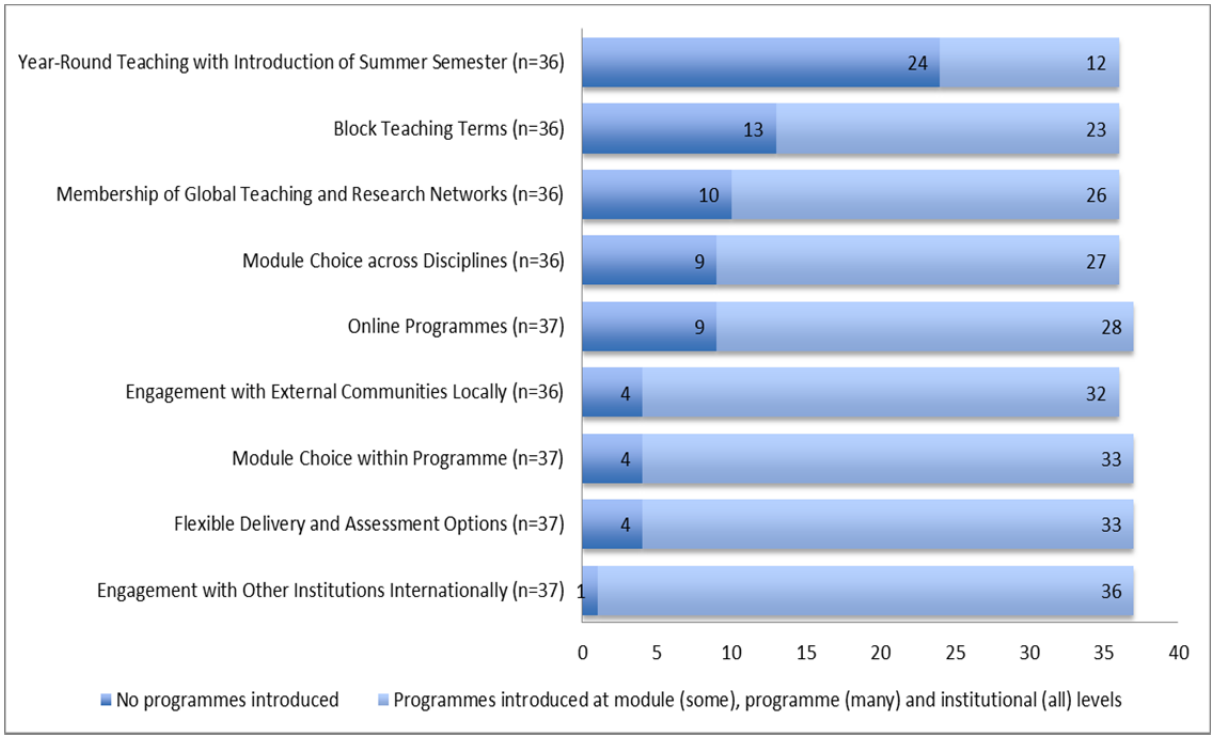
5.2.2 Programme organisation

Figure 12 shows the innovations in programme organisation that respondents reported as having been introduced in their HEIs, and

[18] Problem-based learning is an instructional method of hands-on, active learning centred on the investigation and resolution of messy, real-world problems (Learning Theories 2016)
[19] See Inquiry Learn (2016)

Table 8 provides examples of these programme innovations from the case study analysis.[20]

Figure 12: Innovations in programme organisation according to survey respondents



Survey question: What innovations in education provision has your HEI introduced in terms of programme organisation?

[20] Note that, when an innovation can be closely related to two or three categories (e.g. a MOOC could be considered as belonging to all the three categories), we report it in the area that we deem to best characterise that innovation (e.g. in the case of MOOC it is the ICT category).

Table 8: Programme organisation innovations identified in the case studies

Country	University	Example of innovation
France	ESSEC Business School (Annex 1)	• Increased engagement with local firms and government (known as the Triple Helix model, which was first coined by Henry Etzkowitz; see Etzkowitz 2008 for an example)
		• Implementation of the Bologna process (bachelor's, master's and PhD degrees)
		• Creation of MPhil in Management Sciences
		• Flexible curriculum (credits can be acquired through corporate internships, international mobility or cultural activities)
	University of Strasbourg (Annex 2)	• Continuous evaluation system
Latvia	University of Latvia (Annex 3)	• Engagement of local community and international experts via the Open Minded project (topical courses for personal development through face-to-face or online lectures)
		• Special 'excellence in studies' track for talented students
	Stockholm School of Economics in Riga (Annex 4)	• Team teaching, i.e. several professors together delivering one course
		• Post-graduate students employed as teaching assistants
		• Higher student involvement; students can make suggestions for improvement as part of an advisory board
Slovakia	Comenius University in Bratislava (Annex 5)	• Joint degree programmes (e.g. with the University of Vienna) • Summer schools • Modules in English
		• Broader list of elective courses that students can choose from
		• Internal quality assurance system
	University of Ss. Cyril and Methodius in Trnava (Annex 6)	• Cooperation with local institutions and firms operating in the Trnava region
		• New bachelor's, master's and PhD programmes
		• Reinforcement of international cooperation with foreign universities (e.g. new Erasmus agreements)
		• Offer of modules in English
		• Flexibility in curriculum development
Spain	University of Alicante (Annex 7)	• Blended degree programmes
	University of Salamanca (Annex 8)	• Blended degree programmes • Continuous evaluation system • Spanish language courses taught abroad via 'escuelas de Español'
UK	Anglia Ruskin	• Work-based diploma and degree programme, Degrees at Work

Country	University	Example of innovation
	University (Annex 9)	• Broad offer of distance learning (thanks to the creation of the e-learning unit in the Learning Institute)
	Queen Mary, University of London (Annex 10)	

Figure 12 and

Table 8 show the following:

The engagement with local external communities was reported by 32 out of 37 respondents). This trend was also reflected in the case study analysis. Partnerships and increased engagement, internationally or with other stakeholders, were reported by a majority of case study institutions (ESSEC, the University of Latvia, Comenius University in Bratislava, the University of Ss. Cyrill and Methodius in Trnava, the University of Salamanca and Anglia Ruskin University). This corresponds to two broader trends noted in the literature: (1) a trend where HEIs are relating to and liaising with a higher number of local and international institutions and stakeholders (e.g. ESSEC's implementation of the 'triple helix' model of university–business–government cooperation, the University of Ss. Cyril and Methodius's regional cooperation, the University of Latvia's Open Minded project) and (2) a trend towards the greater outreach of universities towards businesses. These trends feature as an important part of the entrepreneurial universities and distributed leadership models in the available literature. The increase in business–university cooperation has been covered by the previous literature, including the literature on the aforementioned 'triple helix' model.

Achieving a greater level of choice for students and flexibility in delivery and assessment is the second most implemented innovation (reported by 33 out of 37 respondents). Examples of greater flexibility were provided in the case studies of ESSEC (with credit-awarding internships, for example), Comenius University in Bratislava (with a broader list of electives), and the University of Ss. Cyrill and Methodius in Trnava (with the creation of programmes in English as well as a greater flexibility in curriculum). In addition, the offer of modules appears to be expanding, providing students with more options. For example, Comenius University in Bratislava has increased the number of available elective courses, the University of Ss. Cyril and Methodius offers new modules in English, and Queen Mary, University of London offers a set of new online courses.

Online programmes are also popular, having been implemented by 28 out of 37 of the responding HEIs, but most of the time only in some specific degree or diploma programmes (as reported by 28 out of 37 respondents). The University of Latvia's Open Minded project, Anglia Ruskin University's work-based diploma, and the blended degrees mentioned by interviewees at the University of Salamanca and the University of Alicante also constitute examples of online programmes. Online programmes help institutions who seek to reach additional student demographics, professional students (e.g. the work-based programme at Anglia Ruskin University), or international students (e.g. the University of Salamanca's Spanish courses).

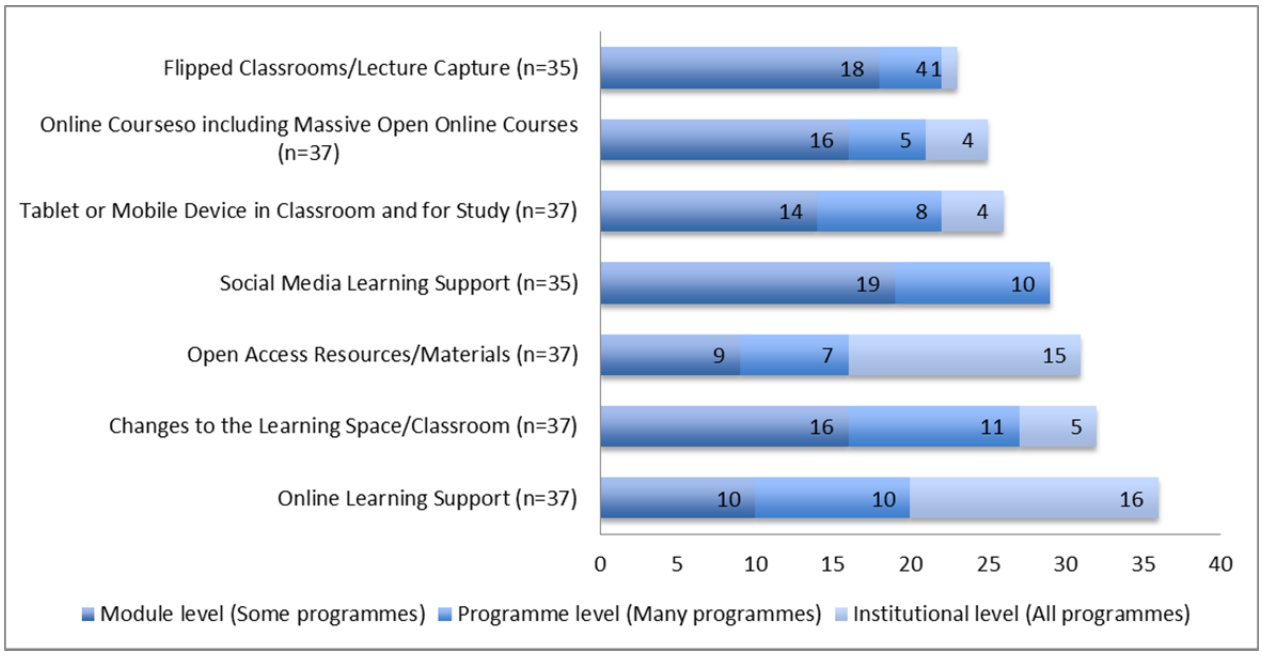
Despite its potential to increase the institution's resources, the introduction of a year-round teaching system with a summer semester, covered by the PA Consulting group as a way to increase the university's resources (PA Consulting group, 2010:7)

did not seem common in European higher education (24 out of 36 respondents reported that this has not been implemented in any course or programme of their respective HEIs).

5.2.3 ICT-enriched learning

Figure 13 and Table 9 summarise the innovations in ICT-enriched learning introduced in participating HEIs, as reported by respondents to the survey and as identified via our case studies.

Figure 13: Innovations in ICT-enriched learning according to survey respondents



Survey question: What innovations in education provision has your HEI introduced in terms of the technology enriched learning environment?

Table 9: Technology-enriched teaching and learning innovations identified in the case studies

Country	University	Example of innovation[21]
France	ESSEC Business School (Annex 1)	• MOOC provided as part of the Digital France University (France Université Numérique – FUN) • FabLab to create ICT-based learning resources
	University of Strasbourg (Annex 2)	• Virtual Campus ('Campus virtuel)' to facilitate networking and exchanges • University Content Management (UCM) and Observatory of the Uses of Digital Technologies (Observatoire des Usages du Numérique – OUN) to promote the use of ICT solutions for the academic community
		• Digital Technology Culture Centre (Centre de Culture Numérique – CCN) to connect the university with other local actors in the Alsace region
Latvia	University of Latvia (Annex 3)	• Moodle-based platform for distance learning • Anti-plagiarism software
	Stockholm School of Economics in Riga (Annex 4)	• Digital exam and anti-plagiarism software • Team-matching software (based on students' skills and interests)
Slovakia	Comenius University in Bratislava (Annex 5)	• Online platform to record lectures and publish them, together with syllabus, exercises, etc. • An 'academic information system' for more efficient administration
		• Use of software intended for academia (e.g. Oracle Academy, Microsoft Dreamspark, etc.)
		• Electronic student inquiry system which allows teachers to obtain feedback on the quality of the student's experience
	University of Ss. Cyril and Methodius in Trnava (Annex 6)	• E-learning education system and digitalisation of lectures
Spain	University of Alicante	• UACloud 'virtual campus' (integrating educational and administrative functions), MOOC and online courses via OpenCourseWare and UNIMOOC

[21] For more detailed information about these innovations, please see the case study summaries, reported in Annexes 1–10.

Country	University	Example of innovation[21]
	(Annex 7)	• Institutional Repository of the University of Alicante (Repositorio Institucional de la Universidad de Alicante – RUA), the institutional repository of the university containing papers and dissertations
		• FragUA, a service to support the development of multimedia materials
	University of Salamanca (Annex 8)	• Studium, a Moodle-based platform for distance learning
		• USALMedia to make short audiovisual presentations to accompany Microsoft PowerPoint presentations
		• Documentary Management Repository of the University of Salamanca (Gestión del Repositorio Documental de la Universidad de Salamanca – GREDOS), an online archive of dissertations and papers
		• Diarium, a blog by professors and students
		• Computer-based simulations (e.g. in medicine and engineering)
UK	Anglia Ruskin University (Annex 9)	• 'Virtual learning environment' (VLE) for distance learning courses
		• 'Lecture capture', a system to record lectures and make them available on the VLE through a system called Q-Review
		• 'Personal capture', a screen-capture software
	Queen Mary, University of London (Annex 10)	• QMplus, a 'virtual learning' platform based on Moodle and Mahara software, e-learning and MOOCs
		• 'Lecture capture' to record and upload lectures on QMplus
		• 'Personal capture' to record audio messages before or after lectures, as well as for online learning
		• Tablets to students (chemistry department)
		• Simulation and online gaming technologies (Department of Medical Engineering)

Figure 13 shows that **online learning support, changes to the learning space/classroom and open access resources** appear to be the most common ICT-driven innovations in HE provision reported by participating institutions (implemented, respectively, by 36, 32 and 31 respondents at various institutional levels). Only one of 37 respondents of our survey reported that the respondent's HEI had not made use of online learning support at any level, whereas the remaining respondents' institutions had. Table 9 shows that ICT-related innovations are the most popular category (in comparison to curriculum delivery and programme innovation): all 10 HEIs examined in the case studies have been using 'virtual learning environments' and online platforms.

The way in which these tools and platforms are used varies significantly across participating HEIs. In some cases these platforms serve mainly as a support tool for face-to-face courses (e.g. lecture slides, course syllabus, course exercises, marks, etc., as is the case at Comenius University for example), whereas in other cases they (also) contain complete e-learning solutions and MOOCs (e.g. University of Alicante). New technologies are used for various other functions, i.e. administrative (as in the case of the 'academic information system' used by Comenius University – Annex 5), or to guarantee the quality and authenticity of academic work (via the anti-plagiarism software that was introduced in the two Latvian HEIs).

Social media constitutes a significant form of innovation for certain specific courses or programmes: 29 of the 35 respondents reported that their HEIs made use of social media learning support, but none of them has reported a systematic use of social media across all the programmes and all the courses of their respective HEIs.

Some case study reports mention social media – such as social networking and blogging – as important complementary tools to deliver a well-rounded higher education, as in the case of Salamanca University, where students and professors can share their ideas anytime on the blogging platform Diarium (Annex 8).

The literature has covered some of the most recent initiatives in education, including flipped classrooms and MOOCs with a mix of enthusiasm and caution (Chester et al. 2013; Bayne & Ross 2014). These **recently debated concepts** were the least commonly reported, with only a third of respondents (23 respondents for flipped classroom and 25 respondents for MOOCs) reporting these in their institutions. The case studies include a few examples of MOOCs, for example at ESSEC, at the University of Alicante, or at Queen Mary, University of London. According to recent statistics (Open Education Europa 2016), Spanish HEIs provide the greatest number of MOOCs in Europe, followed by UK and French HEIs.

Despite this wide use of IT, a majority of respondents saw the 'new' IT trends through a more critical eye. A majority of respondents identified the much talked about massive open online courses as a fad rather than a substantial contribution to the world of higher education. When asked about perceptions of change in higher

education, 56.3 per cent of respondents disagreed with the following statement: 'MOOCs are worth the hype – they make higher education better' (Gibson et al. 2014, 41).

Respondents' scepticism about the value of ICT-based innovation mirrors calls for caution within the literature on the implementation of ICT-related innovations (e.g. Pedro 2006; Redecker et al. 2009; Redecker & Johannessen 2013). This literature suggests that new technologies add more value to higher education when they are included in a teaching and learning approach (rather than simply used as a way to substitute tasks). Incorporating new technologies in teaching and learning approaches involves a redefinition of the teaching approach and curriculum, and takes into account the 'networked' model, based on multidirectional flows of information, which is constantly adapted. In addition, the pedagogic usage of technology needs to be addressed instead of implementing technology without a priori purpose (rather than a unidirectional, 'textbook' model) (Tuomi 2013; Bayne & Ross 2014; Brennan et al. 2014; Flavin 2013; Selingo 2013).

5.2.4 Promising practices

Answers Q1: What are some of the promising modes of education provision across Europe?

The consortium, after deliberation and based on the agreed-upon criteria listed in Table 10, section 4.5, selected five promising practices in higher education provision. These are summarised in Table 10 and described in detail in Boxes 3–7. The practices selected are broadly representative of the range of curriculum delivery, programme organisation and ICT-enriched learning approaches identified by the survey respondents and described in sections 5.2.1, 5.2.2 and 5.2.3, and as such reflect broader trends in higher education delivery and may possibly be transferable to other institutions and settings.

According to the criteria in Table 10, practices were selected as promising if they added value, were or had the potential to be transferable and were sustainable institution-wide.

Table 10: Promising practices in higher education provision

University	Programme	Type	Description
Anglia Ruskin University	Degrees at Work programme	Programme organisation	This programme encourages and accredits work-based learning. Students are expected to spend 8–10 hours a week on learning outside of work and to apply the concepts they have learned in their everyday

			work.
ESSEC Business School	'Innovative chairs'	Programme organisation	The chairs coordinate training programmes, manage a scientific team and its annual budget, develop and maintain collaboration with businesses, advance management science and disseminate research. Each chair is financed by one or more sponsors (ideally a maximum of four), who sit on a steering committee to define the research area and establish an agreement of understanding for a period of a minimum four years.
Queen Mary, University of London	'Lecture capture'	IT-enriched learning environment	Students have access to recorded lectures.
Stockholm School of Economics in Riga	Interactive games	Curriculum delivery	Students simulate the establishment of their own company through this interactive game. In addition, the author of the game (a professor in Portugal) comments on students' company projects via video conference.
University of Alicante	'Virtual campuses'	IT-enriched learning environment	The 'virtual campus' covers all aspects of a course. It provides online courses and MOOC teaching materials, as well as record keeping for grades and attendance, and it acts as a document repository.

These practices reflect the fact that innovations are not only digital innovation (as is the case of the University of Alicante's 'virtual campus' or Queen Mary's 'lecture capture'). They also include changes in teaching methods (gaming at the Stockholm School of Economics in Riga), which can reach a different student demographic, for example, through partnerships outside of the university (e.g. the Degrees at Work programme of Anglia Ruskin University).

The boxes below provide more details regarding the promising practices listed in Table 10.

Box 3: Promising practice: Degrees at Work (DaW) programme

Anglia Ruskin University (Cambridge, UK)

The DaW programme aims to encourage and accredit work-based learning. It provides those in the workplace with the opportunity to engage in learning at the diploma and degree levels. The delivery of the DaW programme can take a variety of forms, which include online learning, distance learning, weekend and evening classes and workplace seminars, or, indeed, a blended approach which includes a number of these methods. The programme also allows for telephone and online access to tutors and the opportunity to consult with other learners. Students are usually expected to spend around 8 to 10 hours a week on learning outside of work (where the teaching is provided online) and apply the concepts they have learned in their studies to their everyday work.

The assessment is based on work-based projects that students would be involved in as part of their work, the distinction being that they need to apply what they have learned throughout the course to their work. The DaW programme is designed to suit both business and employee needs. Courses can last from just weeks to a number of years, and they are designed to allow employees to forge new skills and knowledge which can be applied to their working environment.

The DaW programme operates across approximately 30 courses, which are either whole degrees or derivatives of degrees. Anglia Ruskin University offers both already established programmes to potential students[22] and bespoke programmes designed in consultation with the professional organisations in question and tailored to the needs of the students and their organisations.

Students can apply either independently (i.e. self-motivated students) or through their employer (if the university already has an agreement in place with the specific employer). The design of the programme is based on consultations with companies and Anglia Ruskin professors from relevant faculties.

[22] Students can select established programmes mainly in the following areas: Management, Leadership, Sales, Operations, Project Management, Business Development, Change Management, Hospitality & Tourism, Charity & Social Enterprise, Health & Social Care and Sports Coaching.

The work-based learning concept has been at the core of Anglia Ruskin University's activities[23] since its establishment, and DaW, which is the innovation this team is investigating, represents a natural evolution of it.

The programme is consistently very well supported and recognised by the different units and structures within Anglia Ruskin (vice chancellor's office, corporate unit, faculties, etc.). All in all, the initiative is allowing Anglia Ruskin to raise its profile and reach a wider variety of people according to interviewees at Anglia Ruskin University. Teaching staff involved in the programme can get access to interesting case studies and increase the scope of their research opportunities through contact with businesses. For more details, see Annex 9.

Box 4: Promising practice: 'Innovative chairs'

École Supérieure des Sciences Économiques et Commerciales (ESSEC Business School) (Paris, France)

An 'innovative chair' is a person in charge of an 'ecosystem' which includes teaching, research and publications in certain areas of management, as well as contracts, internship possibilities or even fixed positions for students. A chair can coordinate a training programme for selected students based on their motivations for an area of activity or specific occupations. In order to provide this operation, a chair offers and implements an educational and scientific team that may include one or more PhD students and engineers, as well as an assistant.

Chairs bring ESSEC into close collaboration with businesses keen to develop innovative skills within their sector; their role is to advance management science and practice in response to the latest challenges on the global stage. Each chair is financed by one or more sponsors (ideally a maximum of four). A steering committee – which consists of representatives from the sponsors, experts in the chair's area, one or more chair-holders, the director of the ESSEC Group and the research director or faculty dean – defines the research area and establishes an agreement of understanding together for a minimum period of four years.

[23] To illustrate, Anglia Ruskin University is one of the biggest providers of healthcare training in the region. Students are aged between 35–40 on average so by the very nature of the student body, the university has a very large proportion of students who are both studying and working. This has always been the case; therefore, the university has naturally evolved into providing work-based learning.

Companies that have participated in creating the chair are considered as parent companies and are able to propose possible new partners. The innovative chair team is responsible for the communication of knowledge from research work, its management, and the annual budget presented to the steering committee. Today ESSEC has 18 of these chairs in operation, and it foresees to create new ones in the near future.

A key driving factor which has contributed to creating these chairs at ESSEC is the way in which the curricula are defined (i.e. always aiming to support in real time the emerging directions of social innovation) as well as the importance that ESSEC management has given to the strengthening of university–industry–government relationships.

In fact, ESSEC has strongly supported Etzkowitz and Leydesdorff's (1997) ideas that the institutionally separated spheres formed by university, industry and local policymaking need to collaborate and work together to ensure, in addition to the traditional functions of HEIs, new principles of governance. For more details, see case study summary in the Annexes.

Box 5: Promising practice: 'Lecture capture'

Queen Mary, University of London (UK)

'Lecture capture' software allows lecturers to record and upload live lectures, pre-recorded materials as well as audio messages automatically, using a system called Q-Review.

The introduction of Q-Review is an interesting case in which the senior leadership of the Vice Principal for Teaching and Learning magnified an initiative supported by students, with the support of the Learning Institute (since renamed the Centre for Academic and Professional Development).

'Lecture capture' has been adopted on a voluntary basis institution-wide. As a result, currently approximately 60 of the college's lecture halls have this toolkit in place. Furthermore, lecture rooms which are too small to have the full kit installed have access to a mobile version of the kit.

Several structures and units are in place, both at the college level and at the faculty and school level. These structures (often among other things) are responsible for the design, implementation and support of innovations in teaching and learning. The main centralised unit which is responsible for initiating innovations in teaching and learning is the Learning Institute. The central structure devoted to online teaching and learning specifically is the e-learning unit, which is a subunit of the Learning Institute. Apart from a centralised e-learning unit, some faculties (for instance, the Faculty of Science and Engineering) and schools (such as the School of History in the Faculty of

Humanities and Social Sciences) have their own, in-house e-learning units or specialists who collaborate closely with the members of the central e-learning unit.

The e-learning unit conducted an evaluation of its Q-Review 'lecture capture' system (which included a college-wide survey, a series of focus groups and a cost–benefit analysis). The results of the assessment suggested that 'lecture capture' software is regarded as beneficial and useful by students as well as staff – in fact, 100 per cent of staff would recommend Q-Review to colleagues and 95 per cent of students said that the 'lecture capture' system was useful to their studies according to the Queen Mary website (2016a). Therefore, with the right technology and infrastructure, 'lecture capture' can prove beneficial across all three faculties and, as a consequence, 'lecture capture' was implemented in 10 lecture halls across the remaining two faculties in 2011 (Interviewee 1, 27.04.2014).

The technique is not without technical limitations (for example, cameras are static, which means lecturers have to stand in the same place). However, 'lecture capture', by enabling students to listen to a lecture several times, has been reported to have had various benefits to students, for example, facilitating the revision process or facilitating access to standard lecture material by certain student demographics, including students with disabilities or learning difficulties (QMUL 2016b). For more details, see Annex 10.

Box 6: Promising practice: Interactive game on entrepreneurship

Stockholm School of Economics in Riga (Latvia)

In a course on financial economics, the Stockholm School of Economics in Riga has introduced an interactive game (created in Portugal) on entrepreneurship. With the help of this virtual game, students can simulate the establishment of their own company and go through the stages of development, recruitment and financial planning for five years.

For every decision taken by students, feedback is provided on the remaining cash balance and on whether the company goes into a bankruptcy or can continue to function. Like in real life, 80 per cent of the newly established ventures go bankrupt. The simulation demonstrates that by attracting new money, the owner's share decreases. The students appreciate the game because they must make their own decisions for the development of their company, they get immediate feedback and they can compare their progress with that of the others. During class time, the results of different students are analysed. One of the main benefits students can gain from this game is the understanding that at the initial stage of company development, it is likely they will make wrong decisions.

The Stockholm School of Economics in Riga also holds videoconferences with the author of the game – a professor from Portugal – and he makes his comments on students' company projects. This interactive simulation allows the students to learn practical aspects of doing business and realise the connection with industry. Students have reported that the introduction of the game had a significant impact on the course (Interview Student 1, 13.05.2014; Student 2, , 13.05.2014).

The implementation of the interactive game on entrepreneurship has been facilitated by the high academic freedom that teachers of the Stockholm School of Economics in Riga enjoy regarding the study programme content and methods used. In fact, each course has its own budget, including the teacher's salary, and teachers can decide where to allocate and how to spend it (e.g. in this case, investing part of the course budget to buy the interactive game). Furthermore, under specific requests, course budgets can be increased thanks to the strong alumni financial support that the school has. For more details, see Annex 6.

Box 7: Promising practice: 'Virtual campus'

University of Alicante (Spain)

The University of Alicante was one of the first Spanish universities to implement a 'virtual campus'. A leader to other universities, the 'virtual campus' of the University of Alicante has been gradually integrating educational aspects, administrative management and technological innovations for all user profiles (students, teachers and administrative staff).

Today, the 'virtual campus' platform serves to make material from teachers available to University of Alicante students, to administer their marks and their participation, to provide MOOCs and online courses via the special, integrated tools OpenCourseWare and UNIMOOC, as well as to make available papers and theses via RUA.

The introduction of the 'virtual campus' has been favoured by the attention that the University of Alicante has traditionally given to understanding the educational demands of innovation and new technologies, and in satisfying them by offering training courses to develop teaching skills and competences (e.g. via a specific teacher education program). For more details, see Annex 7.

5.3 Adaptations in governance and management – Drivers and barriers

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Answers Q2: How does the governance and management support these practices (or change to adapt to them)? What is the role of HEI governance and day-to-day management processes in establishing and regulating innovative modes of provision?

Answers Q3: What are the main barriers and drivers for innovative education provisions?

In order to address **research questions 2 and 3**, members of the consortium conducted an analysis of information gathered through the literature review, survey and case studies. This analysis took the form of several workshops, as well as a consortium consultation regarding the dimensions of governance and management which support innovation. As a result of this analysis, the consortium identified five dimensions of university governance and management which appear to support innovation, as well as examples of promising practices related to each of these elements.

As highlighted in section 3.3, the causal relationships among governance, management and innovation are bilateral, in that the university governance and management could react to an identified innovation by adapting to it or they could support innovation through a more top-down approach. This study aimed to capture both types of relationship.

In relation to barriers and facilitators, two groups of factors influencing governance and management can be identified from our analysis. The first group of factors is operational, and these factors occur at the level of the institution. The second group of factors, often involving national governments, is external to the HEI and these factors are system-wide. System-wide factors are a necessary, but not a sufficient condition for innovation. For example, as Burton Clark has argued, university autonomy and financial resources are not sufficient conditions for innovation if the leadership of the institution chooses to concentrate on the past rather than look to the future. The project's research team has designed a self-assessment tool based on these factors. This self-assessment tool is a questionnaire for HEIs to use voluntarily in order to assess the extent to which their institutions support innovation. The tool is presented in Annex 12 of this report.

Table 11 summarises the institutional and system-wide factors identified in the case studies as facilitators of innovation.[24] These are described in further detail in sections 5.3.1 to 5.3.7. Figure 14 and Figure 15 present the factors facilitating and supporting innovation according to survey respondents, as well as drivers and barriers.

Table 11: Institutional and system-wide factors identified in the case studies as facilitators and supporters of innovation

Factor	Description	Examples
Institution level		
Level of institutional commitment and existence of institution-wide strategy	This dimension concentrates on whether there is a senior-level commitment to innovation that is transmitted through a clearly articulated vision (through mission statements or a university strategy, for example) and is communicated across the institution.	• Anglia Ruskin University's corporate and personnel plan • The University of Alicante's UA40 strategy • ESSEC's 3i strategy • The University of Latvia's strategic plan • The University of Strasbourg's IdEx initiative • The University of Salamanca's plan for 'virtualisation', presented in 2014 • Queen Mary, University of London's strategic plan
Institutional support	The universities invest in staff initiatives and training and support the building of synergies.	• Anglia Ruskin's personnel plan, including staff training • The University of Strasbourg's Institute for the Development of Pedagogic Innovation (Institut pour le Développement de l'Innovation Pedagogique) • ESSEC's inclusion of businesses in the

[24] Please note that the authors of the report selected these promising practices on the basis of their relevance in the case study reports.

Factor	Description	Examples
		innovative chair steering committees • Queen Mary's support of 'lecture capture' through its Learning Institute
Financial incentive	The university's innovation objectives are supported by a wide variety of funding sources/investments, including funding by external stakeholders.	• Anglia Ruskin's provision of leadership awards for certain staff categories • ESSEC's corporate funding strategy
Organisational change	Senior positions as well as units for innovation were created. The university has the remit to initiate change (for example, by creating positions or units).	• The University of Alicante has created the position of Vice-Rector for Technology and Educational Innovation (since renamed the Vice-Rector for Information Technology). • The University of Salamanca has created several specialised units, including the Unit for Innovation and Digital Production. • Comenius University in Bratislava has created the positions of Associate Dean for Development, Vice-Rector for Development, and university coordinator. • The University of Latvia has created the position of vice rector for infrastructure development. • Queen Mary, University of London has a Learning Institute, which supports online

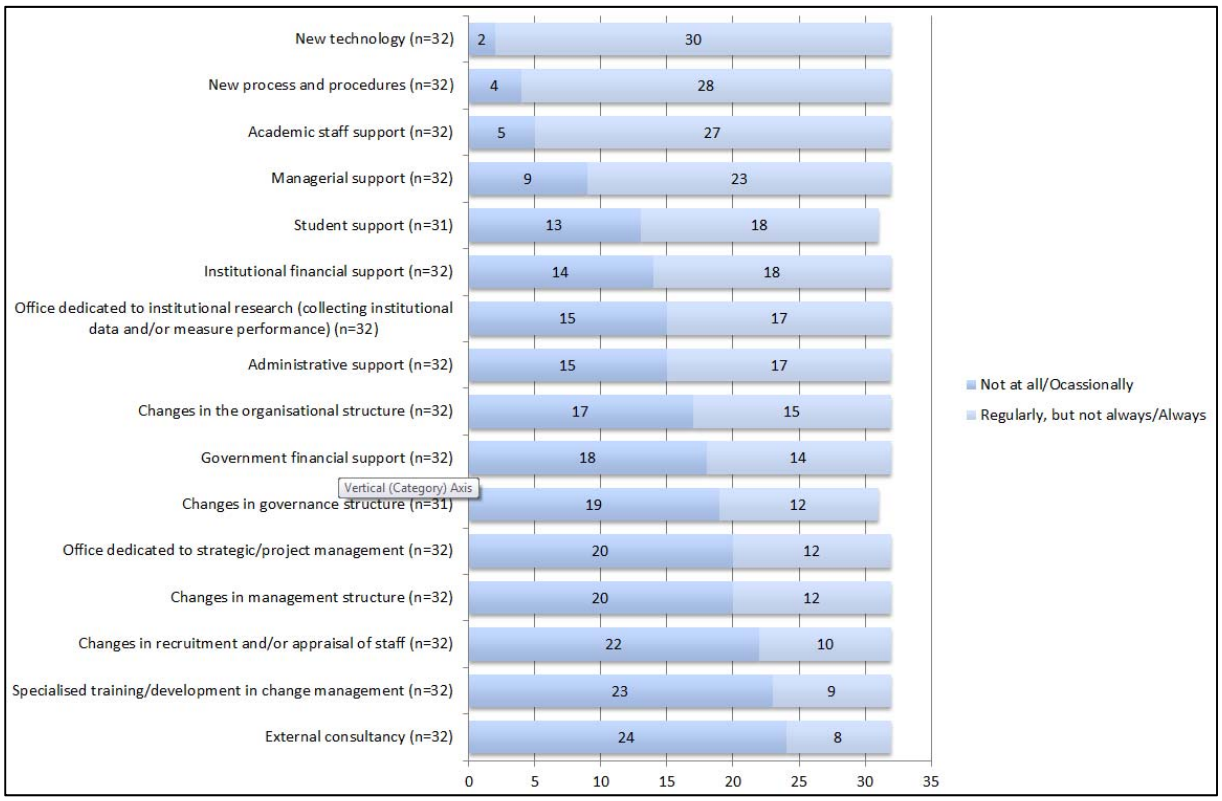
Factor	Description	Examples
		teaching and learning as part of its e-learning unit. Some of its faculties (for instance, the Faculty of Science and Engineering) and schools (such as the School of History in the Faculty of Humanities and Social Sciences) also have in-house e-learning units or specialists who collaborate closely with the members of the central e-learning unit (see Annex 10).
Evaluation, accountability and quality control	The university regularly evaluates and monitors the impact of its innovation strategy.	• The University of Strasbourg and the University of Salamanca have each adopted a continuous evaluation system. • Anglia Ruskin University has clear quantitative targets in its strategic plan regarding the expansion of work-based programmes. • Queen Mary, University of London has key performance indicators related to the use of IT.
System level		
National regulations and frameworks	The government provides higher education institutions with regulations and frameworks suited for innovation.	• The French government has adopted a National Plan for Innovation (Plan National pour l'Innovation).
Funding and financial allocation	The university benefits from sufficient funding, either from public or	• ESSEC's 3i strategy has a significant focus on the diversification of

Factor	Description	Examples
	private sources, in order to innovate. The mode of allocation of public funding incentivises innovation.	funding streams.

While Table 11 outlines facilitators and supporters identified in the case studies, Figure 14 and Figure 15 set out the findings relating to the survey questions (respectively) 'To what extent did the following factors facilitate and support innovation in educational provision at your HEI?' and 'Which of these factors have inhibited or prevented the introduction of innovations in education provision at your HEI innovations in education provision at your HEI?'

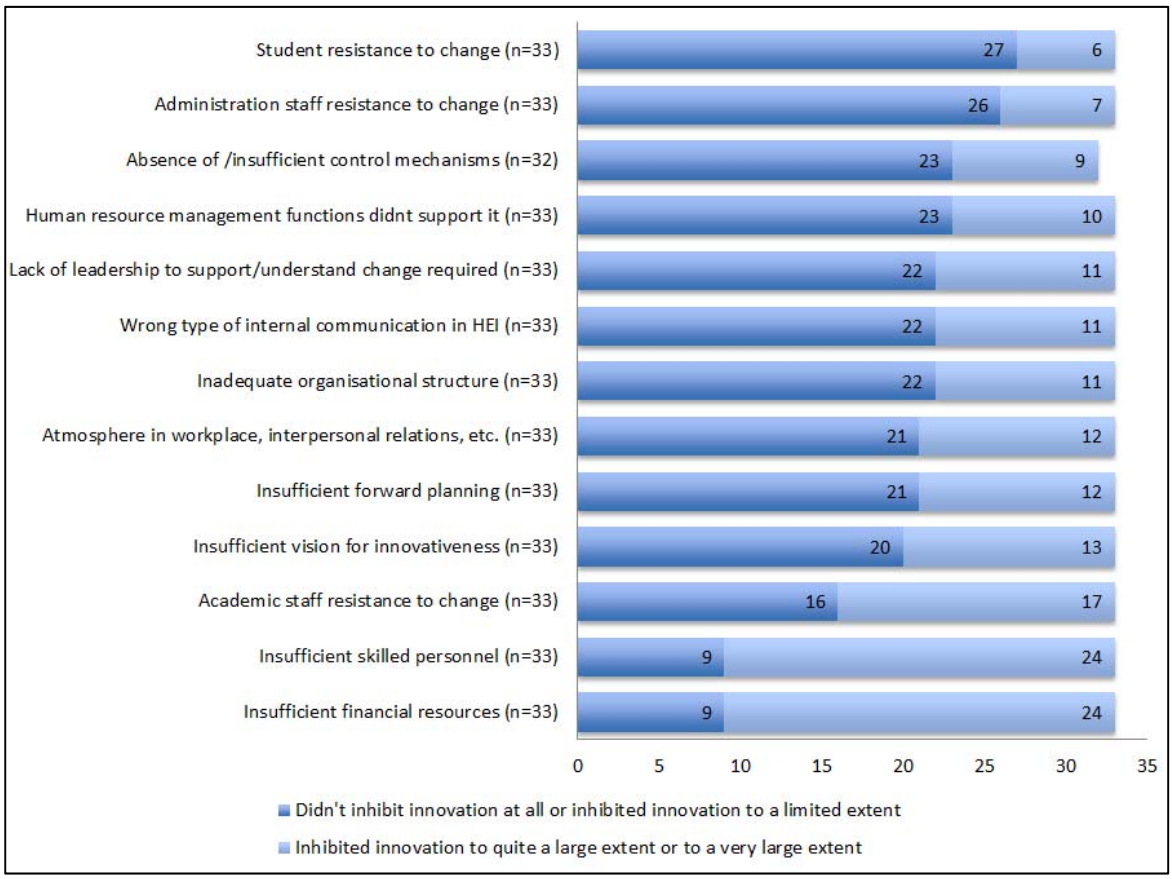
These figures show that the most commonly identified facilitators are organisational change with new processes and procedures (with 28 out of 32 respondents identifying these new processes and procedures as regularly facilitating innovation) and institutional support (with 27 out of 32 respondents identifying academic staff support as regularly facilitating innovation). The relevance of the institution's governance and management was also identified (with 23 out of 32 respondents highlighting that managerial support regularly facilitates innovation). In addition, a lack of vision and leadership were identified by, respectively, 13 and 11 respondents out of 33 as inhibiting innovation. A lack of financial support (either from the institution or the government) was perceived as the main inhibitor of innovation.

Figure 14: Factors facilitating and supporting innovation according to survey respondents



Survey question: To what extent did the following factors facilitate and support innovation in educational provision at your HEI?

Figure 15: Factors inhibiting or preventing innovation according to survey respondents



Survey question: Which of these factors have inhibited or prevented the introduction of innovations in education provision at your HEI?

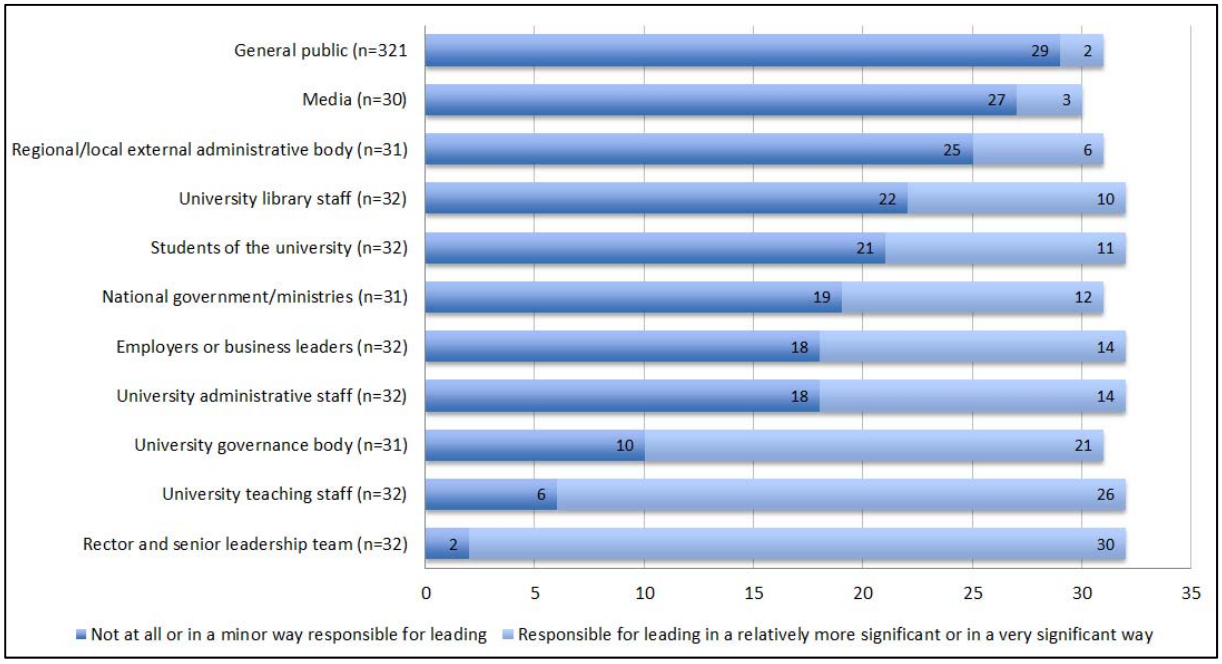
Sections 5.3.1 to 5.3.7 describe in detail the seven institutional and system-level factors listed in Table 11. While sections 5.3.1 to 5.3.7 are structured in accordance with the categorisation from Table 11, the issues identified in the survey, outlined in Figure 14 and Figure 15, are largely covered across these sections.

5.3.1 Level of institutional commitment and existence of an institution-wide strategy

The first dimension identified in the case studies includes the level of institutional commitment and the existence of an institution-wide strategy. This includes whether there is a senior-level commitment to innovation, which is transmitted through a clearly articulated vision (through mission statements or a university strategy, for example) and communicated across the institution.

It is helpful here to consider the survey responses to the question 'Who is responsible for leading innovation in education provision at your HEI, and to what degree are they responsible?' shown in Figure 16.

Figure 16: Individuals responsible for leading innovation within higher education institutions covered in the survey according to survey respondents



Survey question: Who is responsible for leading innovation in education provision at your HEI, and to what degree are they responsible?

Figure 16 shows that almost all respondents identified the rector and the senior leadership team as responsible for leading innovation (according to 30 out of 32 respondents; also see Gibson et al. 2014, 27).

The support of the heads of institutions was perceived by some case study interviewees and participants to the peer learning and training course activity[25] as instrumental to ensure the sustainability and success of an innovation. This is also mentioned in the available literature (see Gosling et al. 2009).

The case studies include examples where senior-level support appears to have been associated with supporting innovation. For example, the Vice Principal for Teaching and Learning played a key role in promoting the expansion of 'lecture capture' university-wide at Queen Mary, University of London. This person identified the initiative undertaken by a lecturer at the time, and capitalised on students' support for the initiative to discuss it more broadly with the academic senate and recommend a

[25] The consortium delivered a peer learning activity at the École Supérieure de l'Éducation Nationale, de l'Enseignement Supérieur et de la Recherche. See GAIHE dissemination report for further information (Florea & McGrath 2016). As of 25 May 2016: http://www.he-governance-of-innovation.esen.education.fr/events/future-meetings/peer-learning-activity-and-training-course-in-poitiers-25-27-november-2015/

voluntary adoption, which has since become university-wide (Annex 10).[26] 'Lecture capture', as a result, is on offer in approximately 60 of the college's lecture halls. The support from the vice principal included identifying, supporting and publicising relevant innovations.

While the example of Queen Mary lends support to the value of a presidential model of leadership in fostering innovation, other examples from the case studies show that different leadership styles (described in section 3.5) were effective in other HEIs. For example, student representatives have been elected to the senate of the University of Latvia over the past five years. And it is important to acknowledge that leaders are not necessarily senior figures in the university. The allocation of leadership at different levels of the institution, a feature of distributive leadership, was noted as a facilitator of innovation across a number of case studies, for example, at Comenius University.

Whatever the model of leadership, the available literature on this issue argues that, to be effective in fostering innovation, HEI leaders need to provide a clear sense of direction/strategic vision, ideally articulated in a university strategy (Gosling et al. 2009). Davies (2001) and Daumard (2001) argue that the dominant controlling and motivating parameter in entrepreneurial organisations evolves around shared mission, values, culture and trust. A university strategy helps to communicate such shared mission, values, culture and trust. This is the case for many, but not all, of the institutions we researched as part of our case study analysis, as Table 11 shows: 7 out of the 10 had a strategic plan, and 1, the University of Salamanca, had a plan to increase its virtual presence.

The case studies provide examples of where specific innovations were directly referred to in the strategic plans of the HEI in question. For example, the move to a 'virtual campus' at the University of Alicante was anchored in the university's strategic plan, called UA40, for the period 2014–2019 (University of Alicante 2016). In another example, Anglia Ruskin University states an ambition to become a world leader in work-based degrees in its corporate plan. This ambition promotes the promising practice of work-based degrees at Anglia Ruskin University identified in Table 10 and Box 3, section 5.2.4.

[26] Participatory governance is also mentioned at Ss. Cyrill and Methodius University in Trnava and Comenius University.

5.3.2 Institutional support for innovation and the impact of innovation on institutional support

A second dimension of management and governance identified as important to fostering innovation is 'institutional support', which includes whether and how the university invests in staff initiatives and training and supports the building of synergies.

Figure 14, at the beginning of the section, shows that academic staff support and managerial support were considered by our respondents to be the third and fourth most important factors to support innovation (after new technology and 'new process and procedures'): 27 out of 32 and 23 out of 30 respondents (respectively) though that these two factors facilitated innovation. These factors are also identified as facilitators in the broader literature (Gibson et al. 2014, 30; Manville et al. 2015).

The value of staff training is also reflected in the responses to other survey questions, shown in

Figure 17. The second main inhibitor to the introduction of innovation was considered to be the insufficient numbers of skilled personnel (24 out of 33 respondents), a finding supported by some of the literature (Jones et al. 2012; Freeman 2012). This suggests that to innovate, institutions need to invest in training their staff. For example, the work-based programme of Anglia Ruskin University requires a proficient level of digital literacy among faculty members (see Annex 9). Where innovations in educational provision relate to new technologies, the impacts of these can only be realised when accompanied by staff training. The wider literature, as well as findings from the case studies, indicate that this training needs to cover not only how to use new technologies and innovate, but also, and most importantly, how to use new technologies in a pedagogical context. For example, Blin and Munro (2008), in their survey of the use of virtual learning environments, discovered that the bulk of the material distributed was 'static' (p. 488) (lecture notes or preparatory notes, for instance), revealing a 'teacher-led and content-driven' (p. 486) approach at odds with the ideals of student-centred innovation.

This means that institutional support should concentrate on staff initiatives and training. For example, Anglia Ruskin University has included staff training in its strategic plan.

Of course, delivering staff training can be challenging; for example, it might be resisted by staff or students. Figure 15 highlights that staff and student resistance to change is the main inhibitor for innovation (this is also covered by Jones et al. 2012; Jaldemark & Lindberg 2013; Newland & Byles 2014).

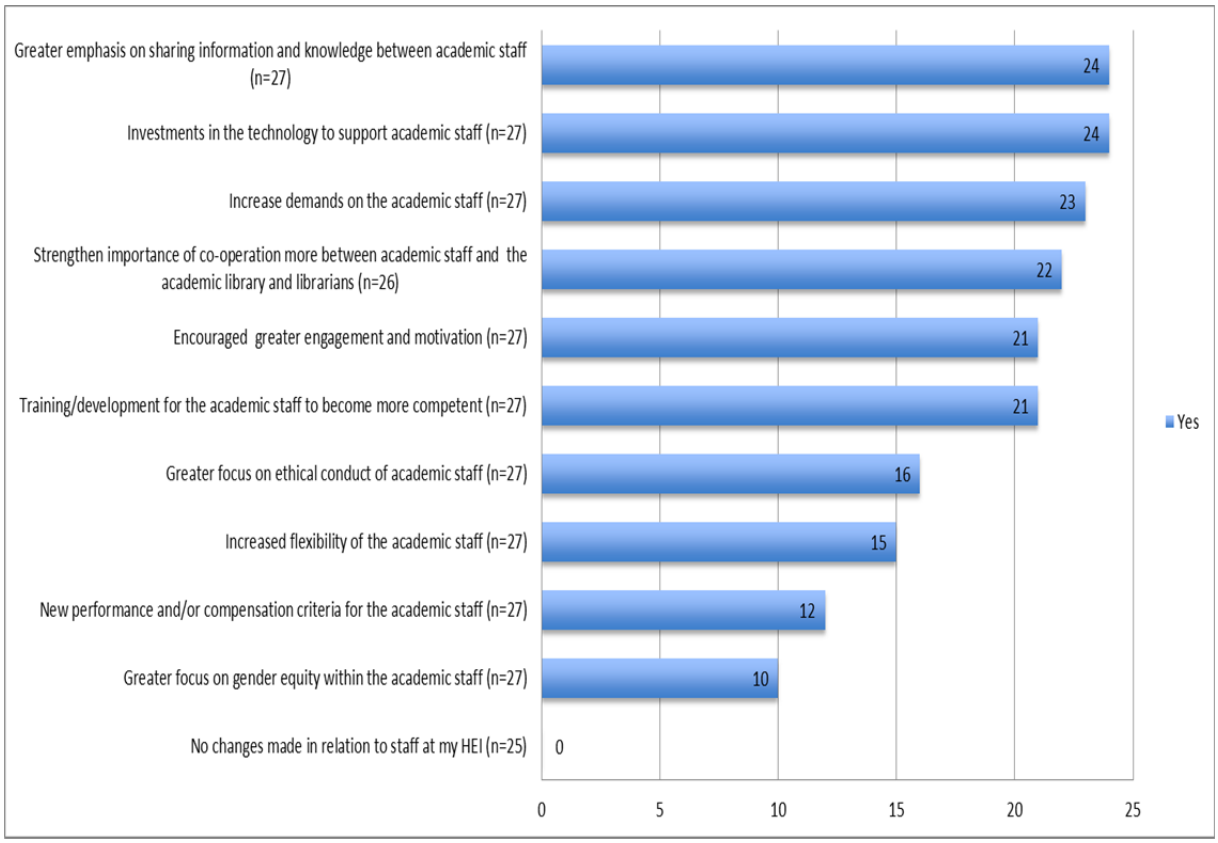
The case studies suggest that designated support units could also incentivise staff to innovate. An example of a support unit is the Centre for Academic and Professional Development (previously known as the Learning Institute), and its e-learning subunit, at Queen Mary, University of London. This centre supports innovations in teaching and learning at Queen Mary by providing staff development activities, developing practices and policies, advising academics and other professionals, benchmarking practices, expanding commercialised continuing professional development (QMUL 2016c) and raising the profile of development activities across Queen Mary (QMUL 2016d).

Another example is the University of Strasbourg, which set up the Institute for the Development of Pedagogic Innovation as part of its IdEx initiative. These units also have the advantage of promoting practices across faculties and promoting institution-wide learning.

As mentioned in the introduction to section 5.3, the GAIHE project aims to look at the associations in both directions between institutional support and innovation. The discussion above looks at the perceived impact of institutional support on innovation.

Figure 17 shows findings from survey responses about whether innovations in education provision (teaching and learning) led to any changes in the working conditions or expectations of academic staff. We include this figure to illustrate how academic staff can benefit from being supported by innovation in their day-to-day tasks.

Figure 17: Changes in working conditions and expectations of academic staff resulting from innovations in education provision according to survey respondents



Survey question: Have the innovations in education provision (teaching and learning) led to any changes in the working conditions or expectations of academic staff of your HEI?

Respondents reported that their institutions were putting a greater emphasis on sharing information and knowledge among academic staff (for 24 out of 27 respondents). Elaborating on this response, members of the consortium stressed that the key was sharing information and knowledge across the HEI as a whole, not just within a particular faculty.

Figure 17 shows that 23 out of 27 respondents thought that innovations in education provision are increasing demands on academic staff. This is mirrored in examples from the cases studies, such as the Stockholm School of Economics in Riga and Comenius University in Bratislava, which show that academic staff were already very busy because of increased enrolment numbers, which did not leave much time to staff for upskilling to innovate further. The implication of this is that institutions should support staff by providing capacity for them to attend relevant training to boost innovation.

Finally, institutional support also involves enabling the set-up of synergies with stakeholders. For example, ESSEC had business representatives in the steering committees of the 'innovative chairs' (see Annex 1).[27] And the University of Ss. Cyrill and Methodius has developed partnerships with the region of Trnava (Annex 6).

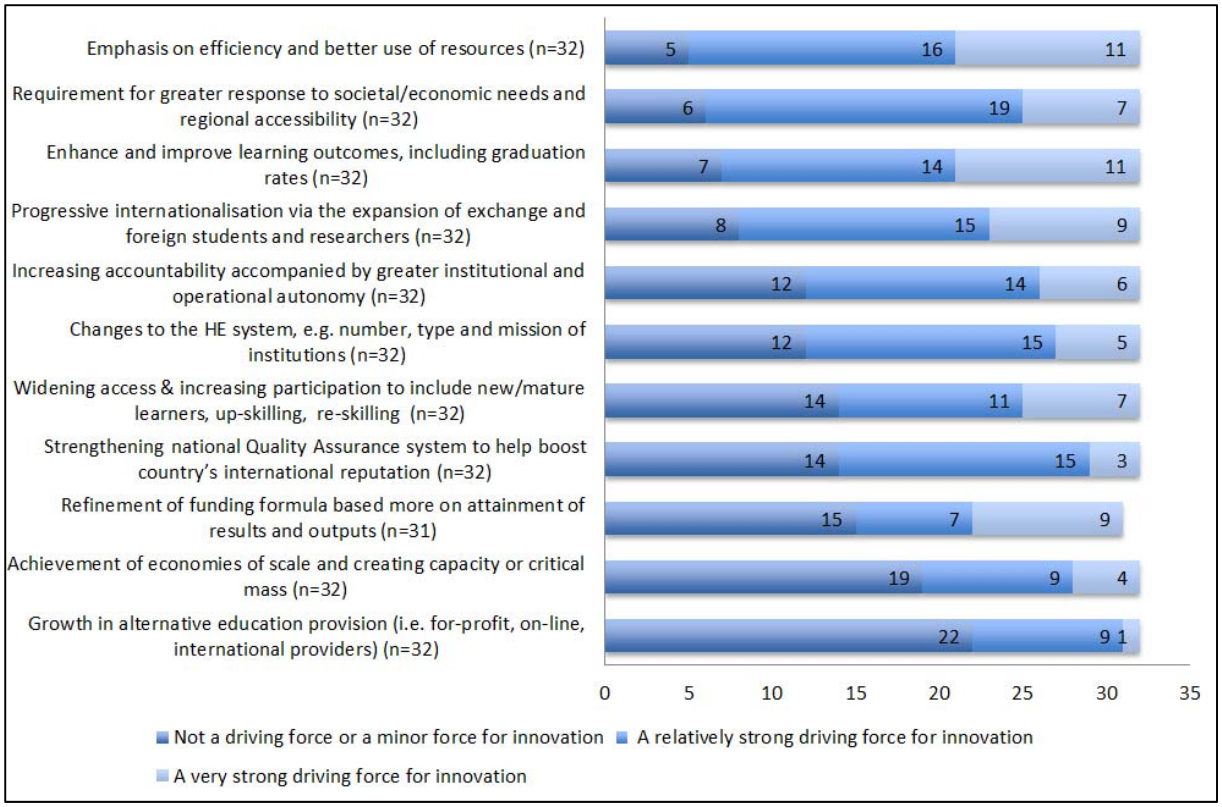
5.3.3 Financial incentives for innovation

The third element of governance and management identified by the consortium as playing an important role in facilitating innovation is financial incentives.

Developing financial incentives would address, on the one hand, the fact that survey respondents reported that the main inhibitor to innovation is the lack of financial resources, and, on the other hand, the fact that efficiency and the better use of resources is reported to be a strong factor driving innovation (according to 27 out of 32 respondents, as shown in Figure 18 below). For example, some innovations, such as the expansion of online courses, were reported to stem from an effort to improve efficiency in response to funding shortages.

[27] While it is not unusual to have community representatives in one of the council structures of the university as a whole, the sponsorship of a chair with a governing steering committee including external stakeholders has been found to be more unusual.

Figure 18: Financial and other factors driving innovation according to survey respondents



Survey question: To what extent are the factors below DRIVING innovation in education provision at your HEI?

Some national governments are providing seed funds to encourage HEIs to pursue joint or external funding, or to encourage innovation, as is the case in France with the French National Plan for Innovation, which includes 12 million Euros for developing digital technologies within HEIs and 4.6 million Euros to create student centres for innovation, entrepreneurship and technology transfer.

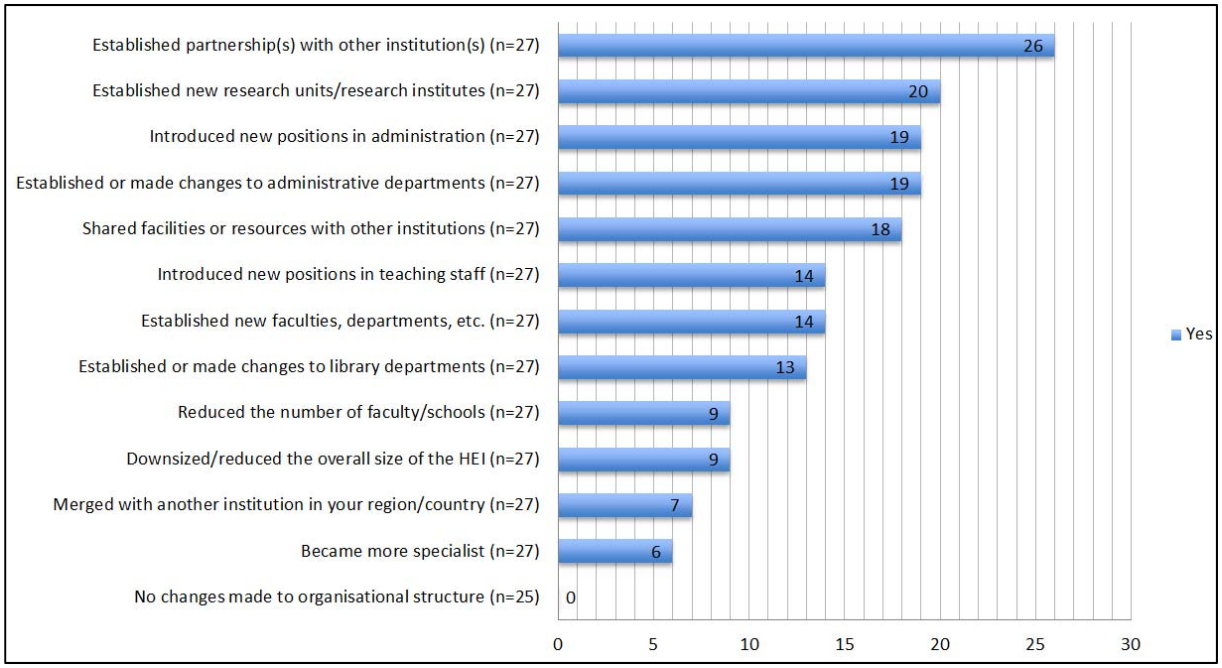
Other institutions have created academic positions to help generate alternative sources of funds, including, for example, the Innovation Chairs at ESSEC, academic chairs which are funded by businesses (as covered in Table 10 and Box 4, section 5.2.4). Financial incentives also include rewards to staff for relevant initiatives. For example, Anglia Ruskin University provides leadership awards for certain staff categories. Incentivising good leadership, as these awards do, may indirectly promote innovation.

Finally, incentives for innovation can be part of human resource policies (as covered by the case studies of Comenius University in Bratislava, Annex 5; the University of Ss. Cyrill and Methodius in Trnava, Annex 6; and the University of Alicante, Annex 7). Incentives could include for example some elements of innovation in job descriptions as a criterion in recruitment and promotion/remuneration decisions, or punctual rewards (such as limited prizes and awards).

5.3.4 The impact of innovation on organisational structures

A fourth factor which could both support and be influenced by innovation is organisational change.

Figure 19: Changes in organisational structure effected by their higher education institution according to survey respondents



Survey question: Have the innovations in education provision (teaching & learning) led to any changes in the overall organisational structure of your HEI?

The most commonly reported forms of changes in organisational structure within participating HEIs which resulted from innovations in educational provision involved diversification of the HEI organisation. This involves establishing partnerships with other institutions (26 out of 27 respondents), new research unit/research institutes (20 out of 27 respondents), or the introduction of new positions in administration (19 out of 27 respondents). Learning from the case studies suggests that positions or units with a clear mandate allocated to innovation could help to share information institution-wide to promote cross-departmental fertilisation, communication and consistent practices across departments. Cross-departmental communication, or lack thereof, was reported as a contributing factor in limiting some innovations in the case of the University of Strasbourg (Annex 2).

Various case studies reported the creation of units or positions which aim to foster innovation – although it is important to note that the case studies do not provide evidence about whether or not such units are effective in generating innovation.

For example, the University of Alicante created the office of the Vice-Rector for Technology and Innovation (currently called the Vice-Rector for Information Technologies). The University of Salamanca in Spain has created several specialised units, including the Unit for Innovation and Digital Production (from 2010) to provide

support for the integration of new technologies in teaching and the Unit for Coordination and Organisation of New Degrees, also created in 2010 (see Annex 8).

Comenius University in Bratislava has created the positions of Associate Dean for Development, of Vice-Rector for Development, and of University Coordinator for e-Learning and other New Forms of Education (see Annex 5).

The University of Latvia has created the position of Vice Rector for Infrastructure Development, whose role is to oversee the new campus building, and a new chancellor position, whose role it is to improve financial resources planning (Annex 3).

Queen Mary, University of London has a Centre for Academic and Professional Development (formerly called the Learning Institute), which supports online teaching and learning as part of its e-learning unit (QMUL 2016e). Some of its faculties (for instance, the Faculty of Science and Engineering) and schools (such as the School of History in the Faculty of Humanities and Social Sciences) also have in-house e-learning units or specialists who collaborate closely with the members of the central e-learning unit (see Annex 10).

The available literature suggests that the ability of a HEI to adapt its organisational structure can reduce the waiting time for administrative responses and make the hierarchical structure more flexible,[28] two elements which were mentioned in the case studies on the universities of Strasbourg (Annex 2) and Salamanca (Annex 8) as impinging innovation. In order to reduce the time spent on administrative processes, the Stockholm School of Economics in Riga set up a two-month maximum response time for administrative requests (Annex 4).

Organisational change is not necessarily limited to individual positions and units. It can take the broader form of a new university set-up. Indeed, innovations in education provision can force institutions to restructure themselves entirely. For example, institutions can be encouraged to adopt new structures to reach more students abroad, as does the Latvian branch of the Stockholm School of Economics, based in Riga, which acts as a branch campus (Annex 4).

Finally, downsizing was not common among surveyed institutions. Institutional mergers were reported by only 7 out of 27 respondents, and only one example was

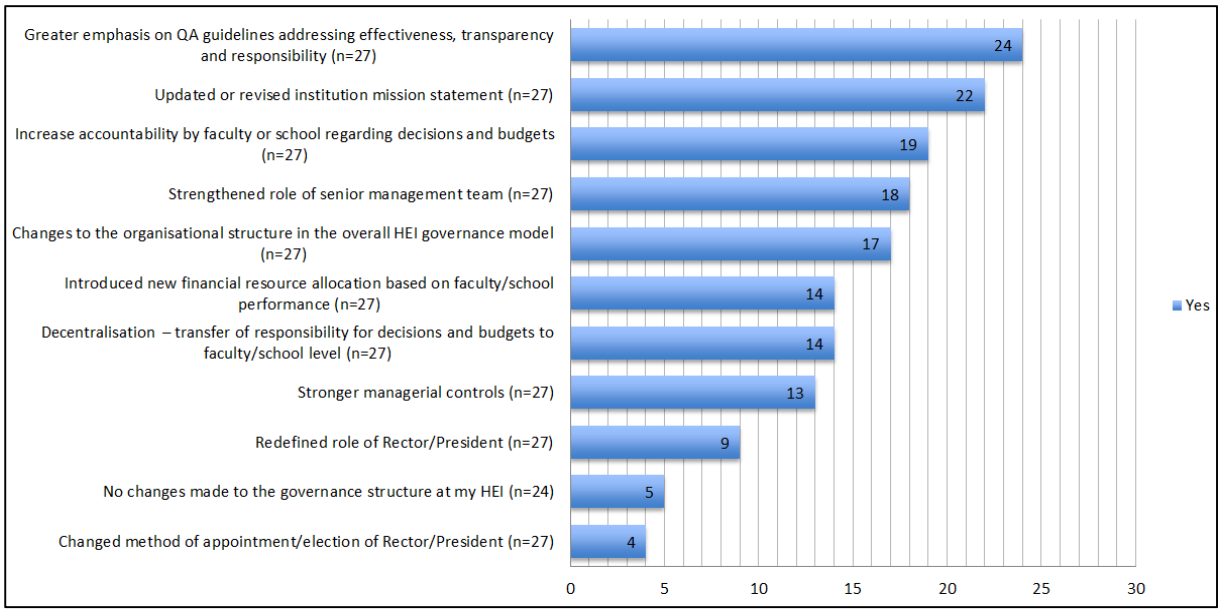
[28] See, for example, Jacob et al. (2003) and Debackere and Veugelers (2005) for further information on inertia in universities.

identified in the case studies, namely, a merger of three universities to create the University of Strasbourg.[29]

5.3.5 Impacts of innovation on evaluation, accountability and quality control

The final cluster of factors pertaining to governance and management that could be impacted by (and support) innovation relates to evaluation, accountability and quality control. Figure 20 below, which looks at the changes survey respondents reported in the governance of their HEI as a result of innovation, lists various potential governance changes, including a greater emphasis on quality assurance, updated mission statements, an increase in accountability and a strengthened role for the senior management team.

Figure 20: Impact of innovation provision on the governance structure of their HEI according to survey respondents



Survey question: What are the impacts of innovation in education provision in regard to the governance structure at your HEI?

24 out of 27 respondents, i.e. 88.9 per cent of respondents to the survey, identified a 'greater emphasis on quality assurance guidelines' as one of the main impacts of innovation (see Gibson et al. 2014, 35).

[29] See the case study report for the University of Strasbourg. As of 25 May 2016: http://www.he-governance-of-innovation.esen.education.fr/activities/documentation/cs/

Some examples from the case studies highlight the use of evaluation to assess changes introduced as part of innovation. For example the University of Strasbourg and the University of Salamanca have each adopted a continuous evaluation system.

Evaluation could involve several stakeholders, including senior managers or academics and administrators in a peer review form.

Finally, an evaluation needs clear performance targets. Anglia Ruskin University has clear quantitative targets in its strategic plan regarding the expansion of work-based programmes. And Queen Mary, University of London has key performance indicators related to the use of IT. These performance indicators and quantitative targets help to evaluate the impact of an innovation. Evaluation can also cover curricula (as discussed in the case studies of the university of Ss. Cyrill and Methodius in Trnava, Annex 6, or Comenius University, Annex 5) or ICT-related elements (as is the case at the University of Alicante, Annex 7).

5.3.6 The role of national regulations and frameworks in facilitating innovation

The relationships between universities and governments vary among different European member states. For example, HEIs in certain systems evolve with a relatively large amount of autonomy. Universities in such countries as the UK (or, more accurately, England, given its devolved system) France or Latvia are free to set their academic structures, create legal entities and design the content of their courses. They also have some discretion over their financial management, being able to borrow money, keep some surplus and sell buildings. Other systems, such as those in Sweden or Slovakia, are more restricted, with guidelines issued for academic structures, legal entities and financial management.

These differences impact on what universities can do, and how they manage and run themselves. For example, we acknowledge that the reliance on a strategic plan, presented in section 5.3.1, may be less relevant for universities where the national government provides more managerial guidelines, as is the case in Slovakia, according to the autonomy scoreboard from the European University Association (EUA).[30]

However, we have found that national regulations are part of a complex dynamic. On the one hand, there was an overwhelming feeling among consortium members, participants to the project and respondents that national regulations and the

[30] The autonomy scoreboard assesses and compares the levels of autonomy that the university has vis-à-vis its national Government across European countries. Retrieved from: http://www.university-autonomy.eu/about/

consequent lack of autonomy for HEIs made it difficult for their institutions to innovate. On the other hand, national plans can unblock resources and provide guidance for certain innovations (for example, the French National Plan for Innovation has made 12 million Euros available to increase the use of digital technologies and 7.6 million Euros to create incubators aiming to increase tech transfers between higher education and the business environment) (see Ministère de l'Éducation et de l'Enseignement Supérieur 2016).

HEIs remain public institutions across most of Europe, and as such are publicly regulated. In this respect, despite a growing trend in the late 20th century to increase institutional autonomy (Castro 2012), HEIs have also been steered by certain national frameworks and have actively sought to encourage and invest in innovation (including, as mentioned earlier, the French National Plan for Innovation and the Spanish University Strategy 2015 (2010), which promoted the creation of university business clusters).

Some case studies indicate the value that more autonomy from government might being to some institutions in some countries (as discussed in section 5.3.1). While too much regulation may lead to a lengthening of the time taken to reach administrative decisions because of the multiplication of hierarchical layers, national governments have shown that they play a role in incentivising innovation. And national incentives for innovation can stimulate innovation. For example, some national governments have adopted national strategies to stimulate innovation, as was the case of France with the National Plan for innovation. This plan occurred in parallel with the adoption of relevant strategies, such as IdEx at the University of Strasbourg and 3i at ESSEC Business School, both of which include measures to increase innovation.

Another type of autonomy touched upon and defended by case study authors is academic autonomy. Academic autonomy touches upon the freedom of academics within an institution. Some of the most innovative methods, such as the use of gaming at the Stockholm School of Economics in Riga (see Annex 4), were set up with a fairly high level of autonomy, i.e. the entrepreneurship game course in fact has its own budget, including the salary of the teacher. Such a level of autonomy, accompanied by appropriate incentives, was found to encourage innovation in that case.

5.3.7 Government funding to higher education institutions and funding allocation

A final factor relevant to facilitating innovation pertains to the amount of government funding received by institutions (section 5.3.4 concentrated on financial incentives provided by the institution itself). HEIs have been under pressure to diversify their funding streams and become more efficient as the result of a proportional decrease

in funding per student – which a net increase in the number of students has exaggerated (see Harloe & Perry 2004; Johnstone 2010; Hazelkorn 2013).

The significance of financial incentives and the availability of funds in general were a major topic of discussion throughout this project. Shortages in public funding were identified in a majority of the case study reports.[31] And the need to diversify funding was discussed several times during this project with consortium partners as well as participants to the peer learning activity that this project undertook for higher education managers (held at the École Supérieure de l'Enseignement National in Poitiers, in January 2016, and presented in the dissemination report and the *Final Report – Public Part*).

While the reduction in public funds can make implementing innovations difficult because of a lack of resources, it might also stimulate higher education institutions to change by 'doing more with less', sometimes on a for-profit basis (Harloe & Perry 2004; Alexander 2006; Redecker et al. 2009; Chester et al. 2013; Istance & Kools 2013; Jaldemark & Lindberg 2013; Newland & Byles 2014). Indeed, Figure 18 shows that 27 out of 32 respondents to the survey indicated that the increasing need and pressure for efficiency and better use of resources (due to growing resource constraints) has been a key external driver of innovation in their institution.

The way public funding is allocated has also been debated. HEIs typically receive public funds either as one lump sum (a block grant, with different levels of conditions attached) or as separate budgets for different activities (line items). The efficiency of either block grant or line items is intensely debated (for example, see the case of the University of Latvia, Annex 3). In order to incentivise institutions, the conditions attached to the public budget would also need to include innovation.

This allocation takes place at different frequencies across the EU, ranging from one to four years. A system of annual financial allocation can constrain planning and implementation into a short-term perspective (see, for example, University of Latvia, Annex 3), especially given the long period of time it takes to implement certain technologies.

Financial support does not necessarily need to involve investing more of the institution's funds for certain types of innovation (for example, project-based innovations or the creation of partnerships). Connecting staff to external grants, such

[31] Case study reports referring to the need for further financial resources to promote innovation include the University of Strasbourg, the University of Latvia, the Stockholm School of Economics in Riga, the University of Ss. Cyril and Methodius in Trnava, the University of Alicante and the University of Salamanca.

as EU grants, could also help to broaden the university's funding base, as pointed out in the case study of the University of Strasbourg (Annex 2).

6. Conclusions and recommendations

This report has set out findings from the GAIHE project, which examined innovative modes of higher education provision and ways in which the management and governance of higher education is changing in support of innovation in higher education provision. The project involved 12 partners across 8 European countries.

Main questions. This report covered the following questions:

- **Q1**: What are some of the promising modes of education provision across Europe?
- **Q2**: How does the governance and management support these practices (or change to adapt to them)? What is the role of HEI governance and day-to-day management processes in establishing and regulating innovative modes of provision?
- **Q3:** What are the main barriers and drivers for innovative education provisions?
- **Q4:** Which recommendations can be issued regarding higher education institution management in innovative provision?

While the title of the project suggests a focus on how governance and management adapt to innovations, the project was also interested in understanding how innovation can be generated through managerial changes.

Methodology and deliverables. The methodological approach followed by the project is described in section 4. It included desk research, the development and implementation of an online survey disseminated across representatives of university leaders in 47 institutions in 9 countries (Austria, France, Ireland, Latvia, the Netherlands, Romania, Slovakia, Slovenia, Spain) and the production of 10 institutional case studies across 5 countries (France, Latvia, Slovakia, Spain, and the UK) to determine promising practices.

The strength of the methodology employed is that it engaged with experts across Europe and gathered detailed information about particular institutions and innovations that constitute potentially promising practices. It was an important objective of the project to promote an exchange and mutual learning across consortium members. Such mutual learning, promoted by the Erasmus Multilateral programme, was important given the diversity of HEI institutions taking part in this project. This diversity reflects the spread of institutions in existence in the European Union. The key limitations of the approach are a reliance on the perceptions of HEI stakeholders on what constitutes innovations in their institutions and how to support it. In the absence of other, more objective evidence about the impacts of innovation in higher education provision and the factors that favour it, the study is careful not to

assume that the promising practices are generalisable to other institutions and countries, and it consequently pays attention to the context in which the promising practices took place.

Main findings. The main findings of our research are presented below, organised by research question.

Answers Q1: What are some of the promising modes of higher education provision across Europe?

The literature review, case studies and survey results undertaken as part of this project helped the consortium to identify the following practices – covering curriculum delivery, programme organisation and IT/ICT-related matters – as promising (see Gibson et al. 2014, 19–23; Villani et al. 2014, 11–13):

- In terms of curriculum delivery, recent trends typically include competency-based degrees (as an alternative to time-determined qualifications), work-based or employment-based learning, outcome-based education, interdisciplinary courses, inquiry-based learning or student-based learning. Our consortium has identified the example of the use of gaming at the Stockholm School of Economics in Riga as an example. This example shows how technology can be integrated into a curriculum to get students engaged in the resolution of practical problems.

- In terms of programme organisation, recent trends cover blended learning (which includes a learning at least partly delivered through online and social media), year-round teaching, engagement with other institutions and the broader community, and flexible delivery and assessment options. We highlight the practices of the Degrees at Work programme at Anglia Ruskin University as an example of reaching out to professional students and of the 'innovative chairs' at ESSEC as an example of a professorship that manages programmes involving the business community.

- In terms of IT/ICT practices, recent trends have included flexible access to teaching material. The examples of 'lecture capture' at Queen Mary, University of London or of the 'virtual campus' at the University of Alicante were selected because they involve the institution as a whole.

Most of our examples involve new technologies. However, we would like to highlight that innovations are not only digital. They also include changes in teaching methods, curricula and programmes, which, for example, allow the institution to reach a different student demographic, for example, through partnerships outside of the university. And, as highlighted by the literature, new technologies need to be incorporated in pedagogic usage of technology, rather

than being implemented without a priori purpose (Bayne & Ross 2014; Brennan et al. 2014; Flavin 2013).

Answers Q2: How does the governance and management support these practices (or change to adapt to them)? What is the role of HEI governance and day-to-day management processes in establishing and regulating innovative modes of provision?

Answers Q3: What are the main barriers and drivers for innovative education provisions?

The information collected during the GAIHE project led to the identification of operational and system-wide factors which can operate either as a driver of innovation (if enacted) or as a barrier (if non-existent).

To conceptualise these factors, we draw on the concepts of 'entrepreneurial university' and 'distributed leadership', which are widely discussed in the literature. While both notions highlight that the boundaries of traditional universities are challenged and that institutions need to become more outward focused, open and reactive to their environment, these notions assume different starting points related to the allocation of power across an institution. The term distributed leadership describes a diffuse form of power across university actors. In support of this concept, several case studies conducted for this project highlighted instances where staff and students played an important role in initiating an innovation. The concept of an entrepreneurial university offers a framework centred around the idea of a strong decisionmaking core, namely, the head of the institution. Again, this project found support from case study examples (and from the views of experts participating in the study) that individuals and university leaders have a vital role to play in facilitating innovation. These two frameworks (and the fact that we found some support for the value of each of them in this study) alert us to the existence of different types of leadership and to the need for leadership to be tailored to the institutional context.

The following factors which support innovation in governance and management were identified in the project:

- A high-level institutional commitment from the head of the university and an institution-wide strategy which supports innovation through clear, measurable actions and performance targets. We note that 3 out of the 10 institutions we have covered as part of our case studies had no university strategy available on their website.

- Institutional support, through staff initiatives, training and support for the building of synergies. The University of Strasbourg has, for example, created an Institute for the Development of Pedagogic Innovation.

- Organisational support, involving the creation of senior positions and units with a mandate for innovation. For example, the University of Alicante had a Vice-Rector for Technology and Innovation; and the University of Salamanca had the Unit for Innovation and Digital Production.
- Financial support for innovation, which involves the funding of innovation objectives, potentially through a variety of funding sources. For example, the ESSEC innovation chair is funded by various businesses.
- Regular evaluations of initiatives to stimulate innovation to understand their impacts. Queen Mary and Anglia Ruskin have clear performance targets against which to evaluate initiatives.

In addition, system-wide factors, including the regulatory environment and funding base, also play a role in stimulating innovation. The magnitude and type of these system-wide factors may be context-specific, given the wide variations in levels of autonomy and funding capacity across European countries. They are also a necessary but not a sufficient condition for innovation, given that the university leader and the university staff also have a significant role to play in innovation.

Main recommendations. Based on these findings, our report wishes to issue a number of recommendations.

Answers Q4: Which recommendations can be issued regarding university management in innovative provision?

These recommendations were agreed upon by the consortium, based on the promising practices identified as part of this project, as well as our survey of HEI leaders. Given the limitations to this study, these recommendations are intended as activities and ideas that HEIs may consider adapting to their context and further testing to understand their impacts on innovation:

- Innovation relies on institution-wide leadership and strategy, which bind the institution around a sense of purpose, the implementation of which needs to be regularly evaluated. Leaders include senior representatives supporting innovation. Staff and students also have a role to play in generating ideas. We recommend that each HEI include innovation objectives, defined in measurable performance targets, in its strategy.
- In addition, HEIs need to provide the right institutional support; organisational flexibility; financial incentives; and evaluation, impact and quality assurance framework to support innovation. We recommend that each HEI consider how the type of institutional support, organisational layout, financial incentives and evaluation procedures enhance the institution's innovation potential.

- Innovation needs to be understood broadly. It is not restricted only to new technologies (although digital innovation was understandably popular). Our case study and survey results suggests that student-centred, skills-based methods of teaching are also gaining ground in Europe, for example. In addition, new technologies are not an end product and need to be included in a coherent pedagogical approach. We recommend that HEIs consider not just investing in technology, but prioritising training staff and developing support structures to facilitate the inclusion of innovation in a coherent teaching and learning approach.

We welcome and encourage the further exchange of practices across institutions of higher education in Europe as well as other stakeholders, in order to facilitate the transmission of ideas. This further exchange could be articulated around the dimensions to support innovation, using relevant tools, such as the self-assessment tool used in this project.

Annexes

Annex 1: Case study 1 – École Supérieure des Sciences Économiques et Commerciales (ESSEC Business School), France

ESSEC was visited in April and May 2014. Eight representatives were interviewed, and one focus group was conducted. Participants were from relevant centres or had relevant decisionmaking positions.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	• Increased engagement with local firms and government (known as the triple helix model) • Implementation of the Bologna process (bachelor's, master's and PhD degrees) • Creation of MPhil in Management Sciences • Flexible curriculum (credits can be acquired with corporate internships, international mobility or cultural activities) • Une grande école : pourquoi pas moi ? (A selective school: Why not me?), a tutoring programme in which ESSEC students tutor pupils in schools and high schools in disadvantaged neighbourhoods
Curriculum delivery (i.e. pedagogical innovations)	• 18 'innovative chairs'; they are all defined in relation to a corporate or professional environment • Case-based learning via student social entrepreneurship competitions • Promotion of social entrepreneurship among graduates via Antropia, the social entrepreneurship centre of expertise • Flexibility of curriculum; each student can create her or his own path by designing its own learning project • Innovation Product Construction (Construction des Produits Innovant – CPI), a six-month cooperation programme that encourages students and professors collaborate to create innovative products • 'Cognitive map' in order to stimulate student learning
Technology-enriched teaching and learning (i.e. ICT employed in education)	• FabLab, a laboratory created in order to collect research and development, hi-tech, and knowledge content • Digital France University (France Université Numérique – FUN) encourages MOOCs, used to develop the first social entrepreneurship chair in France

1.2 Which examples of innovation would you think are worth investigating further?

We consider that CPI, the 'cognitive map' and the programme Une grande école: pourquoi pas moi? are interesting elements to analyse in the future in order to establish the positive results of ESSEC in terms of outcomes, ranking positions and student satisfaction.

1.3 Are there unique elements (i.e. "new to the world") introduced?

Flexibility is the unique element that distinguishes the ESSEC Business School from other French HEIs. European and French HEIs try to organise and normalise their programmes and curricula; however, ESSEC uses flexibility as a driver to develop excellence and innovation.

Promising practice in higher education provision:

'Innovative chairs'

An 'innovative chair' is an 'ecosystem' which includes teaching, research and publications in certain specific areas of management, as well as contracts, internship possibilities or even fixed positions for students. A chair can coordinate a training programme for selected students based on their motivations for an area of activity or specific occupations. In order to provide this operation, a chair offers and implements an educational and scientific team, which may include one or more PhD students and engineers, as well as an assistant. Chairs bring ESSEC into close collaboration with businesses keen to develop innovative skills within their sector; their role is to advance management science and practice in response to the latest challenges on the global stage. Each chair is financed by one or more sponsors (ideally a maximum of four). A steering committee – which consists of representatives from the sponsors, experts in the chair's area, one or more chair-holders, the director of the ESSEC group, and the research director or faculty dean – defines the research area and establishes an agreement of understanding together for a minimum period of four years. Companies that have participated in creating the chair are considered as parent companies and are able to propose possible new partners. The chair team is responsible for the communication of knowledge from the research work, its management, and the annual budget presented to the steering committee. Today, ESSEC has 18 of these chairs in operation, and it foresees the creation of new ones.
A key driving factor which has contributed to creating 'innovative chairs' at ESSEC is the way in which the curricula are defined (i.e. always aiming to support the emerging directions of social innovation in real time) as well as the importance that ESSEC management has placed on strengthening university–industry–government relationships. In fact, ESSEC has strongly supported the idea that the institutionally separated spheres formed by higher education institutions, industry and local policymaking need to collaborate and work together to ensure the existence, in addition to the traditional functions of HEIs, of new principles of governance.

1.4 Which examples have added the most value to your institution?

It could be considered that the programme Une grande école : pourquoi pas moi? might be the element with the most value-added.

1.5 Which examples have the most potential to be transferable across other institutions?

Networks with other institutions (public or private) are the elements with the most potential for transferability to other HEIs.	
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?	
CPI programme for innovating content meets expectations regarding sustainability and innovation in the future.	
2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value? In France, as a part of the Regulation on freedoms and responsibilities of universities (Loi sur les libertés et responsabilité des universités), reinforced powers for HEI presidents and the establishment of a quality management system within higher education have been announced.	
Governance	• 'Composant' (thematic commissions with different responsibilities), created in order to develop knowledge production and innovation and create networks with external institutions (public or private) • ESSEC's innovation plan, which is explained in its 3i strategic document.[32]
Management	ESSEC has a chancellor and two boards: • The Supervisory Board of Overseers is composed of 28 members: - 6 representatives of the Regional Chamber of Commerce and Industry of Paris Île-de-France (Chambre de Commerce et d'Industrie de Région Paris Île-de-France) - 2 members of the Paris Catholic Institute (Institut Catholique de Paris) - 5 alumni - 1 member of the Association for Small and Medium-sized Companies (Confédération Générale du Patronat des Petites et Moyennes Enterprises – CGPME) - 4 students - 5 professors - 2 elected members of the administration

[32] See ESSEC 3i strategic report (EESEC 2015).

	- 3 individuals with 'qualified person' status The Board of Trustees, which is the body tasked with managing the ESSEC Business School, is composed of two members of the Regional Chamber of Commerce and Industry of Paris Île-de-France of and a representative of the ESSEC alumni association.
Organisational structure	• ESSEC has 8 departments: - Accounting and Managing Control - Public and Private Policy - Economics - Finance - Operations and Management - Management - Marketing - Information Systems Decision, Sciences and Statistics • ESSEC also has 18 'innovative chairs' and 6 institutes tasked with establishing connections with private companies and research and development networks.
3.1 What are the obstacles faced by HEI's when dealing in implementation and utilisation of innovation? Tension between business and academia Loosely coupled management between different departments at the university while it is difficult to think of the place of the university in the regional innovation system. Furthermore, despite the European dimension given to research and technology policy, and the interplay between the EU programmes and academic actors, the system has to be improved.	
Internal obstacles	Innovation would require more ownership of new technologies by academics, changes in teaching practices, development of networks and peer-to-peer activities
External obstacles	Interest among sponsors and foundations
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	
Partnerships with other colleges (École Central) and internationalisation (in China, Singapore and Shanghai)	
4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/	

an innovation leader on the global or EU level?
Develop sponsorships, networks, cooperation with other HEIs In France, HEIs are increasingly expected to contribute to economic growth and, more generally, to the betterment of society. Specifically, HEIs have to manage scientific and technological research, as well as the dissemination and valorisation of their findings so these serve society. Furthermore, they should develop innovations, enhance technology transfers and expertise and support other associations and foundations in doing so, in order to promote the public interest, to face societal and economic challenges and to encourage sustainable development.

Annex 2: Case study 2 – University of Strasbourg, France

The University of Strasbourg was visited in between April and September 2014. Four representatives were interviewed, and one focus group was conducted. Participants included, for example, vice presidents and directors of relevant centres.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	• Évaluation continue intégrale continuous assessment system, to improve the curriculum and students' skills and competences
Curriculum delivery (i.e. pedagogical innovations)	• Évaluation des enseignements par étudiants, an evaluation of courses by students • Emphasis on skills-development teaching via Approche-Programme, a training for professors in order to develop a skills-centred approach
Technology-enriched teaching and learning (i.e. ICT employed in education)	• Digital Technology Culture Centre (Centre de Culture Numérique – CCN), whose aim is to create a connection with citizens, a local administrator and to build a bridge among socio-economic actors of the Alsace region, researchers, students, entrepreneurs • 'Campus virtuel', whose objective is to introduce a flexible process and innovative virtual frame to facilitate networking and exchanges between members of the higher education institution and local and internationals partners • Observatory of the Uses of Digital Technologies (Observatoire des Usages du Numérique – OUN) • University Content Management (UCM), which aims to make digital technologies more attractive for teaching and research within the academic community
1.2 Which examples of innovation would you think are worth investigating further?	
In terms of pedagogical innovation, the Évaluation des enseignements par étudiants and Evaluation continue intégraleare worth further investigation. In addition, the technological innovation Digital Technology Culture Centre and University Content Management also warrant further analysis.	
1.3 Are there unique elements (i.e. "new to the world") introduced?	
The Institute of Development and Educational Innovation (Institut de Développement et d'Innovation Pédagogique – IDIP), a centre where teachers, students and external people can improve their skills and competences, is a unique element at the University of	

Strasbourg.
1.4 Which examples have added the most value to your institution?
The IDIP adds the most value to the University of Strasbourg. The IDIP aims to improve educational practices at the university and to promote quality in teaching and learning. So far, the IDIP has organised 62 workshops, trained 255 teachers, and achieved 4 cycles of professional development.
1.5 Which examples have the most potential to be transferable across other institutions according to you?
The Évaluation continue intégrale, which uses assessment as a tool of knowledge production, could be transferable across institutions. University Content Management uses a virtual space of academic sharing.
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?
The 'virtual campus' is an element that the University of Strasbourg needs to sustain and improve in order to develop innovation in the future.
2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value? In France, as a part of the 'Regulations on freedoms and responsibilities of universities', reinforced powers for university presidents and the establishment of a quality management system within higher education have been announced. Increased university autonomy (and, more specifically, more decentralised management as well as more autonomous and localised governance) was introduced.

Governance	The University of Strasbourg was created in 2009, following a merger of three universities (Université Louis Pasteur, Université Marc Bloch and Université Robert Schumann). The merger can be considered as an innovation in governance in and of itself for several reasons: • First, the merger process was not the result of government policy but the result of an initiative of the institutions' chancellors. • Second, these changes occurred in a new institutional order in which chancellors acted as entrepreneurs. • Third, the experience of Strasbourg generated a process of

	influence. Relevant elements of the innovation plan of the University of Strasbourg are included in its IdEx project (Université de Strasbourg 2016).
Management	• The university has a chancellor and five vice chancellors, one of whom is delegated by students. The chancellor is elected by the administration council of Strasbourg University for a four-year term, renewable once. Each vice chancellor has particular responsibilities. • The administration council is composed of 31 members and is maintained over a period of 4 years. • The research council.
Organisational structure	The higher education institution is organised into 37 units that offer a broad range of programmes, which cover 5 major areas of studies: • Arts, Literature, Languages • Law, Economics, Management • Political and Social Sciences • Social sciences and Humanities • Science and Technology; Health In addition, there are 78 research clusters.
Human resource management	• The Joint Technical Committee (Comité Technique Paritaire) is in charge of managing human resources policies. • The Joint Institutional Commission Commission Paritaire d'Établissement is charge of managing individual decisions for established staff. • The Joint Consultative Commission for Contract staff Commission Consultative Paritaire l'Égard des Personnels Contractuels is in charge of managing individual decisions for contract staff.

3.1 What are the obstacles faced by HEIs when dealing in implementation and utilisation of innovation?

There is a loosely coupled management among different departments at the university. It is difficult to think of the place of the university in the regional innovation system. Furthermore, despite the European dimension given to research and technology policy, and the interplay between the EU programmes and academic actors, the system has to be improved.

Internal obstacles	Reports that the IDIP and the Department of Digital Technologies (Direction des Usages Numériques – DUN) did not work together and achieved innovative projects in different ways, which could be deemed a barrier to innovation
External obstacles	Lack of funds to develop large programmes
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	
There are plans to develop a unique desk to support and select innovative programmes in research and training.	
4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?	
It is necessary to pay attention to the management of faculties, better integration of faculties and ICT developers, and development of training of academics in innovation and ICTs. An emphasis has been placed on the importance of facilitating knowledge transfer and cooperation among the academic world, businesses and government (on both the national and local levels) as well as other relevant organisations and stakeholders. This includes the development of joint public–private research units as well as the provision of more funds to enhance innovation.	

Annex 3: Case study 3 – University of Latvia

This case study of the University of Latvia was based on interviews with relevant representatives, including, for example, the rector, chancellor and dean of a faculty, as well as a focus group with representatives of the student council. The qualitative research took place during the month of May 2014.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	Engagement of local community and international experts via the Open Minded project. Open Minded is an education initiative designed in collaboration with the University of Latvia, providing for personal development and an exciting learning process together with Latvia's leading lecturers. Open Minded is a project that offers topical courses both as face-to-face lectures and online. One lecture per week is offered, accessible either in the auditorium for a fee or online free of charge. Each course consists of 6–12 lectures, as well as course work, and a certificate is issued upon completion of the course. The courses are organised with the financial support of Nordea bank. Since January 2014, when the project was launched, more than 4,000 students have participated online, and about 350 students have attended lectures in person and have received the certificate for course completion. The faculties are ready to cover part of the expenses for Open Minded activities; hence there is motivation to use modern technologies in the study process.
Curriculum delivery (i.e. pedagogical innovations)	Tailoring courses to students' skills and motivation (e.g. the 'excellence in studies' track). The faculty invented this track for talented students. It is not a separate programme. Each teacher is allowed add to the already existing courses. And approximately half of them have expressed a wish to do so. An mark of 'excellent' – 10 out of 10 – can be earned for something completed outside the course. A specially designed certificate of excellence is also awarded to the student, intended to be acknowledged by the student's future employer(s). Students evaluate these courses.
Technology-enriched teaching and learning (i.e. ICT employed in education)	The university uses a Moodle-based platform for distance learning. It also uses anti-plagiarism software.
1.2 Which examples of innovation would you think are worth investigating further?	

The Open Minded programme merits further investigation.
1.3 Are there unique elements (i.e. "new to the world") introduced?
The Open Minded programme offers topical courses both as face-to-face lectures and as online content.
1.4 Which examples have added the most value to your institution?
The Open Minded programme attracted the wider public for personal development activities, made the university more visible among other HEIs in Latvia, and raised academic staff motivation to use modern technologies in the study process.
1.5 Which examples have the most potential to be transferable across other institutions according to you?
The Open Minded programme could be rather easily transferred to other institutions, in collaboration with the right partners.
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?
The university's management is planning to continue the Open Minded programme in the future; thus it has the potential to be sustainable. Already, 4,000 students have followed the Open Minded programme online, and approximately 350 students have attended lectures. It is therefore expected that this interest would be maintained.
2.1 Which characteristics of the HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value? The modernisation process in Latvian higher education is being carried out according to the European Union's university modernisation agenda. That is, reforms related to university management and administration been ongoing since 2009 and have focused, among other things, on the shift from 'strong ruling' to 'soft steering'. In order to strengthen the autonomy of HEIs, significant changes have been introduced in the system of funding of higher education institutions; these changes ensure that funding follows the 'block grant' model, which allows HEIs to manage their expenditure more freely.

Governance	Five years ago the decision was made to elect a student representative as one of two vice chairpersons of the senate (the main university decisionmaking body). It is a very positive course of action, as student representatives are more visible, student opinions are voiced more, and a compromise on difficult decisions can be reached more easily. The University of Latvia (2011) has described its strategy in its 2010–2020 strategic plan.

Management	To ensure the implementation of all of the structural changes the university is undergoing (e.g. faculty reorganisation, building a new campus), key managers were appointed. The new position of vice rector for infrastructure development, who oversees the building of the new campus, constituted a positive contribution. The appointment of a new chancellor has also contributed to better planning of the financial resources.
Organisational structure	After the separation of the Faculty of Computing from the Faculty of Physics and Mathematics, the executive director continued to serve both faculties, and this is beneficial to the university budget.
Human resource management	The University of Latvia hired a public relations specialist, which it did not have before. The role of this specialist is to make the university more visible to potential students.
3.1 What are the obstacles faced by HEI's when dealing in implementation and utilisation of innovation?	
Internal obstacles	The lack of financing affects three areas – the development of new study programmes, options for fundraising and support of new researchers. Staff struggle to adapt to or accept innovations. Somewhat cumbersome management structures can serve as internal obstacles.
External obstacles	The current legislative base in regard to higher education and research is outdated and does not serve the current needs. Financial planning at the state level is on a short-term basis, but it should be undertaken instead for the medium to long term. The higher education system in Latvia was suffering from funding shortages, as reported by the World Bank (2014), which, after analysing the system, came to the conclusion that it is underfinanced in terms of both public and private funding (both when compared with most other European countries and in terms of the governmental objectives). It is likely that structural underfunding leads to performance constraints and quality problems in all respects (teaching, research and service), as well as to problems with international competitiveness of the sector. Currently Latvia does not have a study programme accreditation agency that is recognised at the European level. Latvia is too small to form a local accreditation agency without creating a conflict of interest; thus an independent international agency might be the solution. The process on how to make changes in the accredited

	study programmes should be more flexible, as the university management cannot directly affect it. The quality of the programme is checked only before accreditation – once every six years.
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	
	In Latvia, the management system of the universities should be improved. More emphasis on financial decisions should be placed on the management councils, but academic decisions should be left in the hands of the senate.
4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?	
In order to become more innovative, HEIs should pay attention to changes in the management system and the consolidation of higher education institutions. As for innovation management, the system should be more dynamic in its processes. There should be more professional administration; academic functions should be overseen separately from financial and structural reforms. In Latvia, the focus should be on increasing the international competitiveness of higher education. In order to do so, the Ministry of Education and Science has begun to implement several reforms. The first one focused on the improvement of the quality of studies; the second, on the consolidation of the higher education and science sectors and the efficient use of resources; and, finally, the third, on the internationalisation of the higher education and science sectors. Furthermore, a new higher education funding model, which would ensure access to high-quality higher education for all, is expected to be implemented. On the institutional level, HEIs should change the attitude that the universities compete among themselves in the world. It should be understood that students are voting for the quality of the university by choosing to study there or not. Innovation is how new knowledge is acquired. There is a need to improve marketing, each year stressing the innovations. It is important to open new programmes, not only to improve the old ones. At the same time it is necessary to think about which programmes should be closed, as the aim is to consolidate, to decrease the number of programmes offered. On the individual level, the academic staff should use modern IT in the study process and feel comfortable with it.	

Annex 4: Case study 4 – Stockholm School of Economics in Riga, Latvia

This case study of the Stockholm School of Economics (SSE) in Riga relies on interviews with various representatives of the school, including the rector and vice rector, as well as some lecturers. A focus group was organised with representatives of the student association. Our case study researcher visited the institution in May 2014.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	Team teaching is teamwork where several professors deliver one course. Several teachers each teach different parts of the course. The good part of this approach is that students can learn about the issues from different perspectives. It is possible to ask the same questions of different teachers, who may respond differently. But, in cases where teacher cooperation is not good, some problems might emerge. For example, teachers might not know all the questions that will be on the exam or they might do not know how the IT platform works. Senior students are employed as teaching assistants. Students in their senior year of study with good grades are involved as assistants in courses they have previously completed. Higher student involvement: The standards of good management principles require dialogue among students, the administration and teachers. At SSE Riga the interaction among these groups is taking place, and students are recognised as a resource. Once per month an advisory board is organised for the administration to meet with students from different committees. Because the school enrols students from different countries, each nationality has its own student representative. So Latvians have one representative, as do Byelorussians, and these representatives attend advisory board meetings. Students also can offer topics for discussion on issues or courses that need to be improved.
Curriculum delivery (i.e. pedagogical innovations)	MOOCs are recognised as electives, and they can make up to 30 per cent of the total elective credit points. Five students signed up for MOOCs, and the administration assigned a space on Google Drive in order to track student success. Each student has her or his own folder to upload assignments and other information related to MOOCs. In spring 2014, students were awarded credit points for MOOCs, and these were added to the diploma. This is a nice way of changing the synergy between the innovations, involving Google Drive. Ordinary courses can be used in combinations with MOOCs. The university has an interactive game on how to develop a business. With the help of the interactive game, students can simulate establishing their own company and work through the

	stages of development, recruitment and financial planning for five years. For every decision students take, feedback is provided on the remaining cash balance and whether the company goes into bankruptcy or continues to function. Like in real life, 80 per cent of newly established companies go bankrupt. This simulation demonstrates that by attracting new money, the owner's share decreases. The students like the game: they must make decisions for the development of the company, they get immediate feedback, and they can compare their progress with that of the others. During class time, the results of different students are analysed. The main thing students can gain from this game is an understanding of how easy it is to make wrong decisions in the initial stages of the company. SSE Riga also holds video conferences with the author of the game – a professor from Portugal – and he makes comments as well. This interactive simulation lets students learn practical aspects of doing business and make connections with industry; since the game was introduced there has been a huge change to the financial economics course. The student association is in charge of the evaluation of the courses.
Technology-enriched teaching and learning (i.e. ICT employed in education)	SSE Riga uses a Moodle-based platform for distance learning. It uses digital exam and anti-plagiarism software. It also uses team-matching software (based on students' skills and interests).

1.2 Which examples of innovation would you think are worth investigating further?

The interactive game on how to develop an own business is worth investigating further.

1.3 Are there unique elements (i.e. "new to the world") introduced?

Promising practices in higher education provision

Interactive game on entrepreneurship

The financial economics course interactive game on entrepreneurship, described in detail above, is a unique element. The implementation of the interactive game on entrepreneurship has been facilitated by high academic freedom regarding the study programme content and methods used that teachers of the Stockholm School of Economics in Riga enjoy. In fact, each course has its own budget, including the teacher's salary, and teachers can decide where to allocate and how to spend it (e.g. in this case, investing part of the course budget to buy the interactive game). Furthermore, under specific requests, course budgets can be increased thanks to the strong financial support from the alumni that the school enjoys.

1.4 Which examples have added the most value to your institution?

The interactive game on entrepreneurship provides students with the opportunity to gain an understanding of the business development process and to experience decisionmaking in business development.	
1.5 Which examples have the most potential to be transferable across other institutions according to you?	
This interactive game is transferable, although initially it was developed and obtained for SSE Riga's needs. SSE Riga is in close contact with the author, providing feedback on this interactive tool and thus supporting its development.	
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?	
This interactive game has a rather high potential to be sustainable, as it already adds value to the study process and as the university management is supporting it.	
2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value?	
Governance	SSE Riga has an advisory board, which meets once per month, and includes a rector, a vice rector, an education committee member, a representative from the student associations, and usually a vice president. Five years ago the cooperation council was developed.[33]
Management	The administration has tried to make daily routines more effective, promoting teamwork, whereby everybody understands how to participate in order to accomplish the task in the most efficient way. Depending on the urgency and complexity of the matter and its priority, the maximum term for administrative decisions is two months.
Organisational structure	In 2010, the status of the school changed, and since then it has been considered to be a private institution, with its own foundation and board.
3.1 What are the obstacles faced by HEIs when dealing in implementation and utilisation	

[33] Our research team could not identify a strategic plan on the website of the Stockholm School of Economics in Riga. As of 25 May 2016: http://www.sseriga.edu/en/

of innovation?	
Internal obstacles	SSE Riga indicated that management challenges relating to the increased number of students, changes in student attitudes, and IT-related issues are the main obstacles when dealing with the implementation of innovations. The number of students the school enrols has increased more than six-fold. It started with 60 students in 2000, and now there are already 400. The main principle of the individual approach to each student has been preserved, but now it takes up too much academic and administrative staff time. For example, drawing up a curriculum tailored to individual needs is challenging.
External obstacles	The higher education system is underfinanced in terms of both public and private funding (both when compared with most other European countries and in terms of the governmental objectives). Structural underfunding leads to performance constraints and quality problems in all respects (teaching, research and service), as well as to problems with international competitiveness of the sector.
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	
	The school needs to think about expansion, as its building is getting to be too small. More space for students, for both group work and for studying, is needed. The school would continue with its IT development, and provide more online learning, but not at the undergraduate level, where studies would be offered in a more traditional manner because it matters that during the face-to-face studies students can establish contacts that they cannot get in an online setting. Sitting at home or going somewhere once a month is not the same experience as having to work together with fellow students. As for the digitalisation of the study process, the school will have to integrate the digital environment in the ordinary classroom and teach the students how and where the necessary information can be found. At the same time, students prefer more online courses even at the bachelor level, as it would be cheaper to study and attract more students to the courses. Students would prefer a broader choice of courses from other universities, including options for double diplomas.
4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?	

SSE Riga is planning to expand its IT development in both the study and the management processes, with an aim to make document sharing, and access to the lectures on the Internet, easier.

SSE Riga should open a master's programme in economics, too.

Annex 5: Case study 5 – Comenius University in Bratislava, Slovakia

This case study of Comenius University in Bratislava relies on five interviews and a focus group of relevant representatives of the university, including some vice rectors, deans, heads of faculty and student representatives. Our case study team visited the institution in 2014.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	• Harmonisation of academic qualifications and the character of study for individual specialisations according to the Bologna process • Summer school • Joint degree programmes, for example, with the University of Vienna • Modules in English • Broader list of elective courses that students can choose from • Internal quality assurance system
Curriculum delivery (i.e. pedagogical innovations)	• Supplementation of education of teachers who have not studied the pedagogical field of study (i.e. supplementary pedagogical training course) • Erasmus support to assist teachers and students in their travels abroad • Establishment of a simulator laboratory • An innovative way of teaching (project-based learning) in which the students have to design their projects and work on them during teaching • Promotion of international education programmes, providing education in the English language, for example the Week of Pharmaceutical Education and Career, Championship in Medical Communication, Excellent Pharmacy • More attention should be paid to practical experiences through the consulting and development centre Manageria at the Faculty of Management • Professional workshops and seminars for students focusing on practice, clinical education, internships • Linking science with practice, engaging students in solving specific commercial projects

Technology-enriched teaching and learning (i.e. ICT employed in education)	• Online platform to record lectures and publish them online together with syllabus, exercises, etc. • 'Academic information system' for more efficient administration • Use of software designed for academia (e.g. Oracle Academy, Microsoft Dreamspark, etc.) • Electronic student inquiry system that allows teachers to obtain feedback on the quality of student's experience; this inquiry (electronic student polls) is carried out twice a year (based on the semester in question) during the examination period; the teachers and subjects are evaluated, using survey questions that centre on the admission office, library, student chamber–academic senate, and the general conditions at the faculty

1.2 Which examples of innovation would you think are worth investigating further? (in the sense of trying to utilize)

- International education programmes
- Summer schools
- Joint degree programmes
- Project-based learning
- Providing education in English language across all disciplines and programmes
- E-learning, online education
- Electronic student inquiry

1.3 Are there unique elements (i.e. "new to the world") introduced?

Promising practices in higher education provision

Project-based learning

Comenius University has been using the project-based learning methods in an increasing number of modules, in both its bachelor's and its master's degree programmes. Project-based learning is an innovative way of teaching in which the students have to design their own project and work on it during the teaching period. Similar to the project- and case-based learning described for Queen Mary, University of London, this inquiry-based learning technique foresees a central role for students' investigative work. Students work in groups to design a meaningful project, to find out which are the main problems to solve, as well as which information and resources they need. Tutors provide feedback to the students to improve their learning process and their final project outcomes.

The implementation of project-based learning and of other innovations in higher education provision has been favoured by several key factors of Comenius

University. Its participatory governance; its flexible, informal organisational structures; the coordination of the impact on teaching acrossdepartments and study sponsors; and the openness of its management have served as powerful generators of innovation in education.

1.4 Which examples have added the most value to your institution?

- International education programmes
- Erasmus support to assist teachers and students in their travels abroad
- Internal quality assurance system and inspections, electronic student inquiry
- Linking the science with practice, engaging students in solving specific commercial projects
- Use of online educational programmes, e-learning education
- Project-based learning

1.5 Which examples have the most potential to be transferable across other institutions according to you?

- Erasmus support to assist to teachers and students in their travels abroad
- Providing education in English
- Use of on-line educational programmes, e-learning education
- Project-based learning

1.6 Which examples have the most potential to be sustainable (or to create further innovations)?

- Harmonisation of academic qualifications and the character of study for individual specialisations according to the Bologna process
- Emergence of a new position of university coordinator of new forms of education
- International education programmes, joint degree programmes, electronic student inquiry

2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value?

The higher education system has undergone several reforms in order to increase the international competitiveness and quality of higher education. The Slovak Ministry of Education offered increased support for scientific activities through the Culture and Education Grant Agency (VEGA, KEGA, APVV, etc.). It also introduced a comprehensive accreditation process and has focused on increasing the level of internationalisation of higher education and of the science and research sectors. Finally, it has promoted the enrolment of foreign students and university staff exchanges through various programmes, such as the Erasmus exchange

programme.	
Governance	• The philosophy of participatory governance • Empowerment of employees
Management	• Increased autonomy (and, more specifically, more decentralised management as well as more autonomous and localised governance)34 • Specific organisational structures (offices), such as the positions of Associate Dean for Development, of Vice-Rector for Development, and of university coordinator for e-learning and other new forms of education • Flexible, informal organisational structures; a sense of freedom and confidence in the workplace; coordination of impact on teaching between the heads of departments and study sponsors; openness of management; paying attention to individual success and accomplishments; ongoing technical support
Organisational structure	• Cross-cooperating teams (inter-faculty, inter-university, international) • Specific organisational structures (offices), such as the position of Associate Dean for Development and Vice-Rector for Development at the university; the creation of the position of university coordinator for e-learning education and new forms of education
Human Resource Management	• Training for employees in the use of modern ICT • Reducing the number of teachers without a PhD degree in favour of those with a PhD degree; increasing the number of associate professors and professors; professional development of teachers; education courses for teachers
3.1 What are the obstacles faced by HEIs when dealing in implementation and utilisation of innovation?	
Internal obstacles	• The lack of particular and exact management processes that would systematically promote the will of

[34] Our research team could not identify a strategic plan for Comenius University. As of 25 May 2016: https://uniba.sk/en

	the staff to innovate • Unclear governance structures and related responsibilities and accountability of the university representatives • Poorly designed human resources functions; teachers must act as initiators of innovations, while their efforts are not remunerated appropriately; job descriptions do not delineate explicitly the innovation-tied activities and responsibilities of employees; the recruiting process usually monitors other relevant factors than the innovative potential of candidates; innovation efforts are just occasionally incentivised (being not systematically involved in remuneration decisions) • Personal negative attitudes of certain individuals and their resistance to change, fear, uncertainty as well as worries that things cannot be changed; staff struggling to adapt to or accept innovations • The generational gap, a lack of interest is perceptible on the part of older, conservative professors • Work overload of the academic staff • Students and their negative attitude towards innovation • Lack of human resource management functions that systematically promote innovation in education or that raise the innovative potential of the academic and administrative staff at the higher education institution; almost every aspect of human resources management presents hurdles to employees' motivation to innovate; job descriptions do not delineate explicitly innovation-tied activities and responsibilities of employees; the recruiting process usually monitors other relevant factors than the innovative potential of candidates; innovation efforts are just occasionally incentivised and are not systematically involved in the remuneration of decisions
External obstacles	• An unsatisfactory legislative environment (which instils hierarchy in a high power-distance manner); serious problems in public procurement (that can result in overcharging for products); extremely complicated and non-transparent administration • Extremely complicated and non-transparent administration • Lack of financial resources in the educational sector

3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?
• To increase support of the transferability of education to praxis, a closer interconnection between education and praxis and the demands of the labour market • To promote a new perspective and emphasis on the lifelong learning, under the influence of demographic changes • To modify the master's degree study in order to promote a restricted specialisation of graduates • To develop procedures aimed at the modernisation and openness of the learning process • To improve the interconnection of study in Slovakia with study abroad and the link it with practice • To apply currently proven innovations in the educational and scientific research process (such as 3D printers at the Faculty of Medicine) • To initiate a change in attitude in people's thinking – to educate people more intensely to be innovative • To get more funding for innovation • To reduce administration and to simplify and link the information systems with the needs of the academic staff • To develop and support e-learning, online learning, cloud computing, distance learning, virtual education • To interconnect the activities of faculties with the activities of commercial organisations more profoundly • To proceed further with extending the teaching of new subjects in the English language • To continuously utilise student surveys, taking into account the results of these polls in the development of study programmes and assessing the quality of teaching • To create a student legal consultancy that will solve real cases directly at the faculties
4.1 What should HEIs improve/change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?
• Reduce the burden caused by administration regarding especially scientific and teaching staff • Change the funding model as well as find the financial resources that would ensure the sustainability of innovation and to apply for support for innovative

projects through various grant schemes

- Solve problems of a technical nature – paying for licensing, finding technical support, etc.
- Present innovations to the staff in a patient manner; continuously increase the expertise of teachers by preparation and training; motivate teachers and explain to them what specific positives the innovation will bring for them and for students
- Align all human resources management functions with this basic idea of requiring quality in teaching

Annex 6: Case study 6 – University of Ss. Cyril and Methodius in Trnava, Slovakia

This case study of the University of Ss. Cyril and Methodius in Trnava relies on six interviews and a focus group including the rector, vice rector and deans, as well as relevant academics.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	• Cooperation with local institutions and firms operating in the Trnava region • New bachelor's, master's and PhD programmes (e.g. European studies, applied media studies) and PhD degree studies (e.g. in public administration and public policy, applied media studies) • Creation of new modules in English • Study program in media relations (Faculty of Mass Media Communication), with innovation focused on a study programme in a foreign language (English) • Flexibility in curriculum development • A Bologna process–based system of education, involving harmonisation of academic qualifications and character of study for individual specialisations • Reinforcement of international cooperation with foreign universities (e.g. new Erasmus agreements) • International Media Education Centre (Faculty of Mass Media Communication), whose main aim is to link all initiatives of media education in Slovakia and to provide professionals and the general public with comprehensive and regularly updated information about this issue
Curriculum delivery (i.e. pedagogical innovations)	• The promotion of internship periods abroad; an emphasis on linking theory to practice • Week of Science and Technology, involving lectures and workshops led by practitioners on the higher education institution's grounds, an innovation that leads to better contact of students with practice
Technology-enriched teaching and learning (i.e. ICT employed in education)	• E-learning education system and digitalisation of lectures; development and implementation of modern communication technology in the teaching process • Digitisation of lectures
1.2 Which examples of innovation would you think are worth investigating further?	

- Cooperation with the Trnava region
- The emergence of new fields of study; the creation of new study programmes in English
- Partnerships between schools and businesses
- The Centre for Social Services and Counselling
- The International Media Education Centre
- The International Institute of Interdisciplinary Research
- Foreign internships
- Innovation of Erasmus grants and conclusion of new bilateral agreements
- Flexibility in developing curricula
- Above-standard courses, which increase the employment of graduates in the labour market
- E-learning education
- Digitisation of lectures
- Quality assessment system (UCM)

1.3 Are there unique elements (i.e. "new to the world") introduced?

- Centre for Social Services and Counselling
- International Media Education Centre
- Start-up and Coworking Centre POINTT
- Creative and event agency Atteliér

1.4 Which examples have added the most value to your institution?

- Cooperation with the Trnava region, which is one of the strong and strategic partners of the university
- International cooperation with universities abroad
- Foreign internships
- Innovation of Erasmus grants; conclusion of new bilateral agreements
- Workshops and special lectures with internationally recognised experts
- Opportunities for practice and internships in various professional institutions
- Partnerships between schools and businesses; innovation of study programmes with an emphasis on linking practice
- Centre for Social Services and Counselling; International Media Education Centre; International Institute of Interdisciplinary Research; Centre for European Studies
- Quality assessment system to ensure the quality of teaching staff and to control and monitor the educational process

1.5 Which examples have the most potential to be transferable across other

institutions according to you?
• Opening of new study programmes in English • International cooperation with universities abroad • Partnerships between schools and businesses; innovation of study programmes with an emphasis on linking practice • Foreign internships • Opportunities for practice and internship in various professional institutions • Innovation of Erasmus grants; conclusion of new bilateral agreements • Workshops and special lectures with internationally recognised experts • E-learning education • Training via e-learning • Digitisation of lectures
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?
• Establishment of a new department of biology at the Faculty of Natural Sciences and accreditation of new programmes (Applied Biology Mgr. and PhD) • Innovation of web appearance of faculty websites, promotional websites and FCB websites • International cooperation with universities abroad • Study programme in media relations (Faculty of Mass Media Communication) – innovation focused on study programme in a foreign language (English) • The Bologna process–based system of education – harmonisation of academic qualifications and character of study for individual specialisations • Quality assessment system – the system should ensure the quality of teaching staff and control and monitor the educational process; the establishment of internal system of quality for education, but also for science and research • Innovation of Erasmus grants; conclusion of new bilateral agreements
2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value?

Governance	• Decentralised management model; f innovation proposals should be initiated by individual departments • Open management model, in which management creates space for the realisation of inventions by students and teachers

Management	• Integrated approach to quality management, increasingly flexible and informal organisational structures, emphasis on participatory governance and employee empowerment and what comes along with the increased sense of freedom and confidence among staff as factors facilitating the implementation of various innovations • Attention devoted to planning and recording activities35 • Maximum support of faculty management for new ideas and plans, resulting in enthusiasm on the part of interested teachers • Communication of management of some faculties with teachers, resulting in a real understanding of the benefits of innovation • Informing employees of each innovation throughout the innovation process 'just in time' • Support of staff on the side of management, facilitating transfer of innovations in the teaching process without compromising its quality
Organisational structure	• Involvement of students in management through membership of various boards and commissions • Establishment of specialised cross-cutting workplacesoffices), working within the creative and event agency Atteliér • Creating new spaces that would offer new techniques, 'machines', or devices to exploit the innovations in the pedagogical process
Human Resource Management	• Work in small teams; weekly meetings • Adequate and decent work performance evaluation • Clear rules for staff evaluation, frequency of assessments • Systematic support of the innovation potential of employees by increasing their qualification growth • Inclusion of innovative potential within the conditions for and system of comprehensive evaluation of teachers • Motivation through financial remuneration of innovators

[35] Our research team could not find a strategic plan on the website of the university. As of 25 May 2016: http://www.ucm.sk/en/about-the-higher education institution/

3.1 What are the obstacles faced by HEIs when dealing in the implementation and utilisation of innovation?	
Internal obstacles	Person-based barriers: • Prejudices of teachers • Educators' (inflexible) thinking • Failure to adopt new methods and workflows • Reluctance of older teachers to innovate the teaching process; staff struggling to adapt to or accept innovations • Obsolete forms, methods and procedures for evaluation of students by teachers • Lack of awareness of teachers about innovative ways of learning • Lack of experience in the innovation process • Indifferent approach and lack of student interest in learning • Management-based barriers: • Lack of communication from management to employees • Lack of coordination of innovation within the Bologna process • Inconsistent management of faculties • Lack of management skills • Insufficient organisation of work • Economic barriers: • Inefficient use of financial resources; lack of regular inspection • The cost of the proposed innovations • Lack of material, technical and technological equipment
External obstacles	• Higher education act not adapted to the current higher education environment • Lack of financial security • Strict rules on the complex and time-consuming accreditation of quality compliance; the education system in the Slovakia is obsolete and cannot flexibly respond to the needs of the labour market or to current trends
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	

Wider societal plans:

- To provide education based on social responsibility for personal development of individuals and the ethical-ecological cultural development of society
- To put pressure on the political elites to create something different than the capitalist model of education, which is based solely on the immediate applicability to the workforce
- To promote innovation that will: (a) allow for continuous lifelong learning, (b) improve spatial equipment and instrumentation, and (c) be in accordance with the changing conditions in the labour market

Study curricula and programmes:

- To adapt the study programmes to changing labour market conditions
- To use e-learning more extensively
- To interconnect parts of the university with subjects from practice and develop a specific and long-term strategy of cooperation with companies
- To ensure the successful completion of a comprehensive accreditation, resulting in the accreditation of study programmes that bring innovation in education
- To increase the number of study programmes in English (respectively other world languages)
- To promote the qualification growth of teachers through trainings, courses, internships and other education

Internationalisation:

- To expand the network of international contacts and increase student participation in international conferences
- To develop joint study programmes with universities in third countries and open study programmes outside the scope of Erasmus
- To create the conditions for the emergence of open international partnerships of teachers, students and businesses to solve specific projects (the so-called open innovation platforms), to be open to the Central European market

Management and communication (involving also ICT issues):

- To apply and evaluate compliance with the directives of quality education
- To employ staff members of value for education, science and research, with the potential to bring innovation to education in academia at the university
- To specify the ideology and orientation of the university
- To revitalise the conditions of extracurricular student life (to ensure enough accommodation and sporting capacity, refurbish existing accommodation for students, focus on a healthy diet)
- To initiate the creation of a central register of students, the task of which will be to increase the competitiveness of students in different fields of study and to motivate the students themselves to undertake such actions, projects and events that distinguish their home institution from other departments dealing with similar issues

• To develop a mobile application that will include information about current events at the university (schedules, announcements, invitations, library etc.) • To use information and communication technologies more efficiently • To establish and develop a scientific technological centre at the university
4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?
Study-oriented actions: • Provide as many study programmes as possible in English (respectively another world languages) • Increase the level of media literacy of students and teachers • Implement new media in teaching • Collaborate with companies from practice; implement their requirements of graduates into study programmes Management-oriented actions: • Apply modern management in the area of funding and remuneration of effective innovative employees • Establish clear goals in the area of innovation in education; develop a strategy and timetable for their implementation Other: • Establish science and technology parks around universities

Annex 7: Case study 7 – University of Alicante, Spain

This case study of the University of Alicante relies on 12 interviews and 1 focus group with student representatives. Participants included academics heads of university as well as institutional leaders of innovation among the academic and administrative bodies. The interviews and focus groups were conducted between May and June 2014.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	Blended degree programmes. The new organisation of University of Alicante education methodology inspired by the construction of the European Higher Education Area (EHEA) focuses on the acquisition of skills where the student becomes the centre of the educational process and a methodological change is observed.
Curriculum delivery (i.e. pedagogical innovations)	Promotion of collaborative working teams for better learning via the Redes (networking) programme, directing their efforts towards improving teaching in general and the quality of student learning. The objective is the promotion of the exchange of experiences, methodologies and tools with professionals in the HE community. The programme was established 12 years ago, and it serves as a role model for other universities worldwide.
Technology-enriched teaching and learning (i.e. ICT employed in education)	'Virtual campus' (integrating educational and administrative functions), MOOC and online courses via OpenCourseWare and UNIMOOC Institutional Repository of the University of Alicante (Repositorio Institucional de la Universidad de Alicante – RUA), institutional repository of the university containing papers and theses FragUA, service to support the development of multimedia materials
	The University of Alicante was one of the first Spanish universities to have planned its teaching and learning activities transversely and integrally, focusing on two axes: the use of ICTs and the provision of information to students. It has also implemented a 'virtual campus', functioning as a leader to many universities, gradually integrating online educational aspects, administrative management and technological innovations for all user profiles (students, teachers, administrative staff). The 'virtual campus' platform serves to make material from teachers available to students, but if the teacher believes that the material has sufficient quality to make it available to everyone, the teacher can upload it in RUA. If and when various materials available in RUA can form a teaching proposal, they can be published in OpenCourseWare. Other tools, such as FragUA and pUA, are made available to teachers to easily and gradually help them to share their teaching materials online with the 'open

	education' movement.

1.2 Which examples of innovation would you think are worth investigating further?

One of the fundamental axes is the intensive application of ICT, with an aligned planning to the objectives of the University of Alicante. There are two key aspects: the creation of audio-visual content and the promotion of platforms that encourage distance learning based on audio-visual content. It implies an educational model based on the intensive use of technology, where students can access courses whenever and wherever they want, teachers can address tutoring and management.

1.3 Are there unique elements (i.e. "new to the world") introduced?

Redes

Promotion of collaborative working teams for better learning happens via the Redes programme, directing their efforts towards improving teaching in general and improving the quality of student learning.

FRAGUA (http://biblioteca.ua.es/es/fragua)

This is a service offered by the university library, in collaboration with the computing service, aimed at the promotion of the use of information and communication technologies in teaching. It is mainly a service for supporting the development of multimedia materials, offering the required equipment and resources for this purpose, as well as the necessary training for their use. It has a pUA Recording Studio ('training pills', consisting of a video, where, among other uses, a teacher gives an oral explanation on the content of a presentation) and booths for the creation of video tutorials, as well as audiovisual equipment available for loan.

Datos.ua.es

This is a portal for efficient and open data management. Datos.ua.es promotes transparency in governance and entrepreneurship through the development of automated information applications. Opening data to society reflects a great commitment, which implies greater participation of both the university community and society at large. It allows for the possibility of opening a new business market from the talent of infomediaries, who, with very little investment and from a multidisciplinary approach, can build applications that create assets and make open data more useful and accessible.

Promising practices in higher education provision

'Virtual campus'

The University of Alicante was one of the first Spanish universities to implement a 'virtual campus', called UACloud. A leader to other universities, the 'virtual campus' of the University of Alicante has been gradually integrating educational aspects, administrative management and technological innovations for all user profiles (students, teachers, administrative staff). Today, the 'virtual campus' platform serves to make material from teachers available to University of Alicante students, to administer their marks and their participation, to provide MOOC and online

courses via the special, integrated tools OpenCourseWare and UNIMOOC, and to make papers and theses available via the RUA.

The introduction of the 'virtual campus' has been favoured by the attention that the University of Alicante has traditionally placed on understanding the educational demands of innovation and new technologies, and in satisfying them by offering training courses to develop teaching skills and competences (e.g. via a specific teacher education program).

1.4 Which examples have added the most value to your institution?

- Redes
- FRAGUA
- Datos.ua.es

1.5 Which examples have the most potential to be transferable across other institutions?

- Intensive use of ICT in open platforms; the development of materials for online access
- Redes

1.6 Which examples have the most potential to be sustainable (or to create further innovations)?

All the examples given are still in function nowadays; potentially there are all sustainable.

2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value?

The Spanish university system is currently regulated by the Organic Law 4/2007, which amended the former law and provided the needed basis for a thorough modernisation of the higher education system; the strengthening of the autonomy of universities; and, as a consequence, the modification of their policies, governance structure and funding priorities.

Governance	For the University of Alicante, the government strategy around information technologies is fundamental to align technology policies with the institution; this has resulted in a portfolio of strategic technology projects. The process starts with an open call for projects, then the projects are presented and valued based on their alignment with the strategic plan and presented to the board for a decision. This is an important shift in the way of governing. Another important aspect in relation to governance is the enhancement of e-government. The University of Alicante was one of the first Spanish universities to implement a 'virtual campus', which was gradually developed by integrating educational aspects, administrative management and technological innovations for all user profiles (students, teachers, administrative staff). The University of Alicante has included innovation in its strategic plan

	UA40 Plan Estrategico 2014–2019.
Organisational structure	The creation of the Science Park, located next to the university campus, promotes the creation of innovative companies. It is a place of excellence and innovation to encourage the business–university relationship and to stimulate technology transfer and the competitiveness of the economic system.
3.1 What are the obstacles faced by HEIs when dealing in implementation and utilisation of innovation?	
Internal obstacles	**Resistance to technology:** An obstacle in terms of innovation is teacher resistance to technology, new methods, modernisation, etc. **Participation and communication:** Although students have access to information, there is a lack of participation and involvement in all the processes and governance organs due to lack of communication. The managerial staff asks students to participate in bodies such as commissions without providing them with certificates that justify missing class. **Quality assurance:** Information transparency and accountability is needed in all quality processes to create a new and better perspective. Moreover, accountability of the university to society needs to be strengthened; perhaps the most representative actors of civil society should be in university bodies. **Lack of information transparency and accountability:** Changes are needed in regard to the macro-lines of innovation and proposals to be performed. To increase information transparency and accountability and decrease teacher resistance to technology, new methods and modernisation would be helpful.
External obstacles	**Regulatory framework**: The regulatory framework hampers the flexibility of innovation, hinders the agility of certain actions and delays many areas. **Resources:** Sometimes one problem is the weariness of people who work without incentives. Although in order to innovate, the educational process implies a burden of work for the academic staff, the remuneration system remains unresponsive to these needs, and staff motivation then suffers. Spanish universities are encouraged to reduce public spending. As a result of the economic crisis, the Spanish higher education system has been subject to severe shortages of funding, which in turn led to a lack of a clear educational agenda. The current reforms in the HE

	system are solely focused on reducing public spending. The reductions have affected virtually all aspects of HE (i.e. staff- and infrastructure-related costs as well as research funding). Those reforms have also resulted in the re-establishment of a highly controlled system in which universities have little autonomy with regards to their spending. Spanish universities have also experienced a considerable increase in the levels of tuition fees, which, coupled with the reduction in available grants and the cancellation of the student loan system (established in 2008), have resulted in limiting access to higher education (in particular for less privileged groups).
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	
	Hybridisation: Nowadays, all curriculum reforms have moved towards specialisation, and one of the most important innovations in education is liberation and hybridisation. It is observed that a sense of specialisation is necessary in research, and that this is achieved when things hybridise. For example, when biology was mixed with nanotechnology, nano biotechnology was born. **Online–offline balance:** The challenge is how universities can assimilate MOOCs in the classroom and how to achieve an online–offline balance. **Open investigation:** Investigation must be open, engaged with society and relevant and has to add value to the research from the perspective of the market, business, politics, unions, etc.
4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?	
Entrepreneurship spirit: The system is failing in channelling innovation, university and entrepreneurship. There are few exceptions where companies and universities play an important role. It is necessary to form professionals with an entrepreneurship spirit. Companies are evolving, and they do not follow the traditional model; they need people with knowledge in logistics, creativity, innovation, etc., and the university has the knowledge and ability to transfer this knowledge to its students. **Incentive system:** An incentive system based on the following criteria is needed: hybridisation, entrepreneurship and employability. Not only to generate graduates, but to generate employed graduates.	

Annex 8: Case study 8 –University of Salamanca, Spain

This case study relies on nine interviews, including with relevant vice rectors, heads of services as well as academics, and two focus groups, one with leaders of innovation in their respective faculty, the other one with technicians and specialists working in the Office for Innovation and Digital Production. Our research team conducted these interviews and focus groups between May and July 2014.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	• Blended degree programmes. These degrees combine traditional teaching in classrooms and distance teaching. They exist especially for master's degrees, although at the moment there is an effort to extend this to B.A. degrees as well. • Continuous evaluation system. In the past a final exam was the only evaluation tool; today teachers are obliged to evaluate students throughout the term using partial exams, papers and classroom presentations. • Spanish language courses. These are taught abroad via Escuelas de Español. This is an attempt to use the university's name as a famous place for learning Spanish in order to create an international franchising company providing jobs for its graduates. A company has been constituted, and it is now opening in different parts of the world. The project also includes the development of specific didactic materials.
Curriculum delivery (i.e. pedagogical innovations)	• Substituting frontal lectures with seminars and workshops For many years frontal lectures were the norm. In the past five years, there has been an effort to encourage alternative teaching methods • More tutoring and independent work by the students • More internship programmes and practical experiences. Prioritising the practical experience of students in different professional fields by offering a wide range of internship programmes.
Technology-enriched teaching and learning (i.e. ICT employed in education)	• Studium: a Moodle-based platform for distance learning. The university created its own teaching platform, which is being continually updated. A lot of effort has been expended in order to train faculty to integrate use of the platform into their classes. According to official data, most lecturers use it today in order to manage their teaching materials and to initiate activities with their

	students. • USALMedia: to make short audiovisuals to accompany PowerPoint presentations • GREDOS: online archive of thesis and papers • Diarium: blogs for professors and students • Computer-based simulator units in areas such as medicine and engineering in order to provide students with more practical experience

1.2 Which examples of innovation would you think are worth investigating further?

- Studium
- Computer-based simulator units
- Escuelas de Español

1.3 Are there unique elements (i.e. "new to the world") introduced?

-

1.4 Which examples have added the most value to your institution?

Escuelas de Español: The idea of Escuelas de Español is to open a door to students' future employability. The prestige of the university as an important centre for Spanish studies is used in order to advance a commercial product which, in turn, will provide work for the graduates of the university.

Studium: This Moodle-based platform provides a grand variety of options to innovate frontal teaching. It allows teachers to upload materials, links and assignments, in addition to carrying out surveys and online activities. It permits chats and videoconferences, as well as forums and online debates.

Computer-based simulator units: Using new technologies, students in the faculties of medicine and engineering can experience a real-life situation simulated by computer. This radically improves their training in their respective fields.

1.5 Which examples have the most potential to be transferable across other institutions?

All three examples are transferable by adapting them to specific universities. The most complicated one is **Escuelas de Español**. However, the idea is transferable in the sense that a link between the unique profile of the HEI and a business model should be found and adapted to receive graduates in specific fields.

The other two innovations, the **Moodle-based platform Studium** and the **computer-based**

simulator units, can certainly be transferred to other universities in their current form.
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?
All three examples are sustainable. The creation of an international chain of **Escuelas de Español** can be the first step toward using a prestigious programme in order to create a commercial product. It is accompanied by the development of didactic materials for Spanish studies. At the moment this is limited to professors, but in the future it can be opened to students as part of their internship programmes. In general, this connection between the university and a business model opens up this kind of option for students and graduates. **The Moodle-based platform Studium** was created to accompany frontal teaching. However, it is also used for online teaching. The university's programme of virtual teaching aspires to include the platform in a much more sophisticated platform, which will include new forms of teaching programmes and materials, such as MOOCs. **Computer-based simulator units** are perceived as crucial for better training and can be used in other disciplines. We can already see other versions of the same idea in other faculties, such as arts and translation, where new technologies are used to immerse students in real-life situations.
2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value?

Governance	The Spanish university system is currently regulated by the Organic Law 4/2007, which amended the former law and provided the needed basis for a thorough modernisation of the higher education system; the strengthening of the autonomy of universities; and, as a consequence, the modification of their policies, governance structure and funding priorities. The University of Salamanca strategic plan 2013–2018 includes some elements of its innovation strategy (University of Salamanca n.d.).
Management	Several specialised units were created, including the Unit for Innovation and Digital Production, which was created in 2010 to provide support for the integration of new technologies in teaching, and the Unit for Coordination and Organisation of New Degrees, also created in 2010. The initiative of elaborating a five-year **strategic plan** was a new step for the HEI and contributed to long-term planning and the adoption of objectives.

Organisational structure	The creation of specialised units has proved useful: • The unit for innovation and digital production was created in 2010 in order to provide support for the integration of new technologies in teaching. • The unit for coordination and organisation of new degrees was created in 2010. • The Office for Internship is dedicated to facilitating the internship of students in companies, augmenting their employability and assisting with the opening of business ventures.
3.1 What are the obstacles faced by HEIs when dealing in implementation and utilisation of innovation?	
Internal obstacles	Insufficient empowerment of the executive bodies was observed at various management levels as the university needs to adapt quickly to a changing world. At the moment, every decision goes through many commissions before it can be implemented. As a result, any innovative measures are slowed down. The current managerial model actually prevents innovation because it slows down all the processes of decisionmaking. This results in a conservative and bureaucratic type of organisational culture that cannot serve as a facilitator of innovation in education. Hence, the nature of the internal environment of the university itself seems to be one of the most powerful barriers to achieving higher innovation potential. Although many new offices and organisational units aimed at innovation were launched recently, the financial support for their operation is still weak, and even though these emerging structures are ambitious and innovative, they do not actually enjoy the economic support of the university and are financed by projects and generate their own funds. In addition, the university depends on the regional government to get permission to allocate funds for these initiatives.
External obstacles	The current situation cannot be analysed without taking the **economic crisis** into account. As a result of the extreme lack of funds, it is difficult to say that Spain has a clear educational agenda at the moment. The current reforms in the HE system have only one goal: to reduce public spending. Spanish universities are encouraged to reduce public spending. The reductions have affected virtually all aspects of HE (i.e. staff- and infrastructure-related costs, as well as research funding). Those reforms have also resulted in the re-establishment of a highly controlled system, in which universities have little autonomy with

	regards to their spending. Spanish universities have also experienced a considerable increase in the levels of tuition fees, which, coupled with the reduction in available grants and the cancellation of the student loan system (established in 2008), have resulted in limiting access to higher education (in particular for less privileged groups).
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	
The University of Salamanca has a very ambitious plan of virtualisation. The plan has three main dimensions: a technological plan, an academic plan and an institutional plan. The technological plan includes: developing technology, producing content and security. The academic plan includes: 'virtual support' of traditional teaching; offering online titles; training teachers; and VirtualE, the 'virtual campus' of the University of Salamanca. The institutional plan includes the adaptation of regulations, the organisation of administrative processes, promoting a corporative brand and the internationalisation of teaching.	
4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?	
The University of Salamanca confronts two main problems when it comes to innovation. First, the current systems of government are extremely bureaucratic and the fact that complex consulting processes are required for every decision does not create a very adequate climate for innovation. In addition, the strict control on budgets and the severity of funding cuts also makes it difficult to initiate innovative endeavours. In spite of this, the good management of available resources and the decision to concentrate on medium-term planning seems to suggest that in the next couple of years the university will be able to attain its objectives when it comes to innovation in teaching. In order to guarantee this process, the public administration should support this effort. The 800 year anniversary has just been declared a national event, a fact that will facilitate raising funds for the companies taking part in the event, in addition to supporting the different units which were created in order to implement the future plans with regard to Internet-based teaching.	

Annex 9: Case study 9 – Anglia Ruskin University, United Kingdom

This case study was based on five interviews conducted between May and June 2014 with heads and administrators of relevant units.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	Degrees at Work is a work-based diploma and degree programme. Anglia Ruskin University has a number of operational units which were established to facilitate non-traditional forms of learning, such as work-based learning and e-learning. These units often overlap in their work and liaise with faculties to facilitate learning among students.
Curriculum delivery (i.e. pedagogical innovations)	More emphasis is being placed on matching academic knowledge and practical experience (e.g. Degrees at Work programme). The Degrees at Work initiative blends academic learning with the professional application of acquired skills. The initiative is designed to use the workplace as an active learning environment coupled with formal training and development programmes from Anglia Ruskin University. While the Degrees at Work programme allows students to acquire new skills and apply them in their working environment, it also recognises, formalises and validates much of the learning that has already taken place at work.
Technology-enriched teaching and learning (i.e. ICT employed in education)	'Virtual learning environment' (VLE) is used for distance learning courses. 'Lecture capture' is used to record lectures and make them available on the VL 'Personal capture' uses a screen-capture software which records what is shown on a PC screen (Anglia Ruskin University 2016). At Anglia Ruskin, this option is used much more extensively by the lecturers and students than is 'learning capture'. This technology allows users to capture what is on their screen and adds audio or a video option to the recording. The benefits of this software are that lectures and information can be shared to the VLE. The recordings can be used to prepare students for upcoming lectures or in the follow-up to lectures, as well as for online learning.
1.2 Which examples of innovation would you think are worth investigating further?	
Degrees at Work	
1.3 Are there unique elements (i.e. "new to the world") introduced?	
Promising practices in higher education provision	

Degrees at Work (DaW) programme

The DaW programme aims to encourage and accredit work-based learning. It provides those in the workplace the opportunity to engage in learning at the diploma and degree level. The delivery of the DaW programme can take a variety of forms, which include online learning, distance learning, weekend and evening classes and workplace seminars – or a blended approach which includes a number of these methods.

The programme also allows for telephone and online access to tutors and the opportunity to consult with other learners. Students are usually expected to spend around 8 to 10 hours a week on learning outside of work (where the teaching is provided online) and to apply the concepts they have learned in their everyday work. The assessment is based on work-based projects students would be involved in as part of their work, the distinction being that they need to apply what they have learned throughout the course to their work.

The DaW programme is designed to suit both business and employee needs. Courses can last from just weeks to a number of years and are designed to allow employees to forge new skills and knowledge which can be applied to their working environment. The DaW programme operates across approximately 30 courses, which are either whole degrees or derivatives of degrees. Anglia Ruskin University offers both already established programmes to potential students[36] and bespoke programmes designed in consultation with the professional organisations in question and tailored to the needs of the students and their organisations. Students can apply either independently (i.e. self-motivated students) or through their employer (if the university already has an agreement in place with the specific employer). The design of the programme is based on consultations with companies and Anglia Ruskin professors from relevant faculties.

The initiative is allowing Anglia Ruskin to raise its profile and reach a wider variety of people. Teaching staff involved in the programme can get access to interesting case studies and increase the scope of their research opportunities through contact with businesses. The work-based learning concept has always been the core of Anglia Ruskin University activities, and the DaW represents a natural evolution of it. Consistently, the programme is very well supported and recognised by the different units and structures within Anglia Ruskin (vice chancellor's office, corporate unit, faculties, etc.).

1.4 Which examples have added the most value to your institution?

The Degrees at Work programme offers an opportunity for individuals to undertake studies at the tertiary level, where some may not have previously had the chance for a variety of reasons (including cultural and socio-economic reasons). The initiative is designed to use the workplace as an active learning environment coupled with formal training and development programmes

[36] Students can select established programmes mainly in the following areas: Management, Leadership, Sales, Operations, Project Management, Business Development, Change Management, Hospitality & Tourism, Charity & Social Enterprise, Health & Social Care and Sports Coaching.

from Anglia Ruskin University. While the Degrees at Work programme allows students to acquire new skills and apply them in their working environment, it also recognises, formalises and validates much of the learning that has already taken place at work. Overall, it is recommended that the application be submitted in cooperation with the employer, as it is beneficial for the student to have support offered in the workplace, usually in the form of an assigned tutor.	
1.5 Which examples have the most potential to be transferable across other institutions according to you?	
Degrees at Work could be transferable across institutions. The implementation of this would require great support at the governing level, the appropriate infrastructure in place to divide responsibility for the implementation of the project, and an online learning environment.	
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?	
The 'virtual learning environment' appears to be at the core of the distance learning at Anglia Ruskin. The VLE at Anglia Ruskin is an online support site which runs alongside all taught modules. According to the Anglia Ruskin University website, the VLE is the main platform for 'asynchronous teaching delivery for all ARU [Anglia Ruskin University] Distance Learning Courses.' The VLE groups information on calendars, modules (apparently separating them by semester) and courses, as well as providing links to relevant webpages and documents that will aid students in their learning.	
2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value?	
Governance	The Degrees at Work programme receives great support and endorsement from the university's top governing tier, and the vice chancellor's office gives a great deal of time to the Degrees at Work scheme. This support is offered in a number of ways: (1) through providing contact details to different businesses and companies who could serve as potential collaborators and (2) through making reference to both the Degrees at Work programme and unit in their speeches and university-wide communications. The university's vision is articulated in its corporate plan 2015–2017 (Anglia Ruskin University 2015b).
Organisational structure	The corporate arm of the university provides support to the innovations at Anglia Ruskin and plans to increase the number of students in online learning and the Degrees at Work programme.

Human Resource Management	The training for academic staff is helpful, although it lacks financial resources.
3.1 What are the obstacles faced by HEI's when dealing in implementation and utilisation of innovation?	
Internal obstacles	There is an imbalance in terms of communicating new ideas between the Degrees at Work unit and faculties. Often, the unit brings ideas from the market to faculties, but faculties do not feed ideas to the unit that could then be pitched in the market place. Staff struggle to adapt to or accept innovations. The varying level of digital literacy of staff members across the schools and faculties is a serious obstacle. There is a wide difference in the engagement with and use of technologies and innovations by academics at Anglia Ruskin. Although best practices in terms of engagement with technologies have been identified at the department level, the dissemination of these practices has proven difficult when taken outside of the department in question. Oftentimes, staff members are hesitant to use new technologies available at universities because they deem their digital competences to be inferior to those of the students. Further, the rapid development of certain technologies coupled with the time and cost of training staff members in their use can act as deterrents to staff from engaging with the technological resources on offer.
External obstacles	Although work-based learning creates many opportunities for individuals, businesses and the university, it is still important to understand the obstacles and challenges of such an approach in education. First, it is important to ensure that the quality of education remains high, and in such a context the training needs to be market responsive even though the duration of validating the degree can be lengthy. Second, sometimes certain changes are quite urgent and should be introduced in the short term (such as adjusting delivery patterns). Third, university and business calendars are not always in sync, and often employers can request Degrees at Work programmes at any point in the year, which can also prove quite challenging from a programme development point of view. A report commissioned by Universities UK (2013), titled *The Outlook for Higher Education Spending by the Department for Business, Innovation and Skills* (Crawford et al. 2013), has attempted to assess the outlook for government non-investment spending on higher education from 2013 up to 2017–2018. The results of the analysis suggest that the upcoming years are very likely to bring substantial cuts in departmental spending, in order to be able to deliver the level of fiscal consolidation required under the government's current plans.

	Those cuts are likely to also impact the areas of science and education (which up until now were of policy priority).

3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?

Anglia Ruskin University has some future plans to expand the scope of some of its initiatives, such as the Degrees at Work and e-learning programmes. These growth plans have been integrated in the corporate plan 2015–2017, whereby the university aims to have 20,000 students enrolled in distance learning and 2,000 involved in work-based learning by 2017.

The Degrees at Work unit is interested in engaging more with employers overseas, but at the moment the programme is very UK focused (i.e. while there are a lot of international students, the employers involved in the programme are mainly UK based). Further, a plan to engage with more multinational companies can be cost efficient and worthwhile for the companies because they can have students in multiple sites who are learning and do not have to travel too much for workshops and training sessions. Moving forward, the plan to develop Degrees at Work includes liaising with international partners to bring the Degrees at Work model internationally, to increase the number of partners across a range of sectors and to expand workplace learning to all faculties.

4.1 What should HEIs improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?

Looking to the future, the university intends to expand its off-campus student body. In preparation for the increased demand on the distance learning service and to ensure the development of this innovation in the future, it will be necessary to create a structure to support distance learning (in terms of staff and administration matters as well as technological capacity). There will be a need to invest resources in staff training and development to ensure a specialised staff possessing online learning and teaching skills.

Anglia Ruskin is seeking to expand its student population and looks to increase graduate and post-graduate enrolment in the coming years.

Annex 10: Case study 10 – Queen Mary, University of London, United Kingdom

This case study of Queen Mary relies on interviews with 10 representatives, including vice principals, deans and relevant policy managers. The interviews were conducted between April and June 2016.

1.1 Which innovations in HE increase the HEI's competitive advantage?	
Programme organisation (i.e. the administrative structuring of teaching)	There is a broad offering of distance learning, thanks to the creation of the e-learning unit in the Learning Institute. The college has a central structure devoted to online teaching and learning, specifically the e-learning unit, which is a subunit of the Learning Institute. The unit is the first point of contact for Queen Mary staff and students who are interested in e-learning, and it fulfils two main roles: support and development.
Curriculum delivery (i.e. pedagogical innovations)	Queen Mary gives students real-life/applicable contexts for learning (chemistry department). Students get exposure to clinical medicine (Faculty of Medicine and Dentistry). The Faculty of Medicine and Dentistry has adopted heterogeneous approaches to education, using problem-based and case-based learning. More specifically, the problem-based learning approach is used in years 1 and 2 and the case-based learning one is implemented in years 3 and 4.
Technology-enriched teaching and learning (i.e. ICT employed in education)	Queen Mary uses QMplus, a 'virtual learning' platform based on Moodle and Mahara software, e-learning and MOOCs. Queen Mary's Q-Review 'lecture capture' system allows teachers to record and upload lectures on QMplus. Q-Review is a service which teaching staff can use to automatically record live lectures or pre-record supplementary materials. This has been implemented college-wide. 'Personal capture' is available to record audio messages before or after lectures as well as for online learning. Tablets are given to students (chemistry department). Simulation and online gaming technologies are used in the Department of Medical Engineering. The Department of Medical Engineering makes use of gaming technology to train students before their empirical sessions in laboratories.
1.2 Which examples of innovation would you think are worth investigating further?	
• 'Lecture capture' software (Q-Review)	

- Problem-based learning

1.3 Are there unique elements (i.e. "new to the world") introduced?

Promising practices in higher education

The introduction of 'lecture capture' is an interesting case in which the vice chancellor for teaching and learning channelled an initiative originally implemented by a lecturer within a department. The vice chancellor promote a voluntary implementation with the support of students, which has led to a college-wide use of a tool that initially was met with significant resistance and scepticism (from lecturers and the college's management). Thus, this serves as an example of how cultural conservatism can be overcome and changes can be implemented if alternative approaches are adopted. Put differently, had student pressure not been so prominent and had the college made the initial use of 'lecture capture' mandatory rather than optional, it would have likely met much stronger opposition.

Problem-based learning and case-based learning

Problem-based learning and case-based learning methods have been introduced by the Faculty of Medicine and Dentistry at Queen Mary, respectively, in years 1 and 2 (problem-based learning method) and in years 3 and 4 (case-based learning method) with the prime aim to show students the relevance and application of the studied material. Both methodologies involve groups of students working together on an open-ended problem or a clinical case. By working in small groups (ideally made up of 6–10 people), students can discuss the problem, realise what they already know and which kinds of information they need to better understand it and solve it. The role of the instructor is to support, encourage and monitor the learning process of the students. Problem-based and case-based learning methods enhance students' problem-solving skills, tend to be more involving and effective than regular lectures, increase students' teamwork skills and increase their ability to identify the knowledge they need to deal with practical situations.

The Faculty of Medicine and Dentistry has integrated exposure to clinical medicine into its programmes' curriculum in the first and second years of the programme (e.g. undergraduate medical students are working shifts with the London Air Ambulance Service) since the redesign of the curriculum, which happened 10–15 years ago. When implementing the scheme, the faculty had come across several obstacles which were primarily related to the teaching staff's reluctance to add an additional component to the already busy curriculum (that is, staff were worried that the introduction of clinical exposure would come at the cost of having less time for studying the actual material). Students, on the other hand, have been very keen on the initiative as they believe that such clinical exposure will enhance their learning experience. While this promising practice has been increasingly used in medical schools across the UK in recent years, the faculty in Queen Mary has been one of the leaders in implementing this scheme.

1.4 Which examples have added the most value to your institution?

'Lecture capture' has been reported to have had various positive outcomes. First, the initiative has proven especially beneficial for non-native English speaking students as well as students with mild degrees of dyslexia or other difficulties, as they have been provided the opportunity to

re-listen to the lecture in case of need. Second, students who have not been able to attend certain lectures (due to, for instance, work or care obligations) have also benefited from the tool, as it has enabled them to catch up with the material on the same day and attend the tutorials prepared. Third, it has enabled students to go back and listen to those parts of the lecture which they found difficult or not understandable as well as re-listen to the lecture and fill in any gaps in their notes. Finally, it has improved students' revision processes and allowed them to be more independent in their studying.	
1.5 Which examples have the most potential to be transferable across other institutions according to you?	
'Lecture capture' is a universal tool which can be used in many different contexts. Its implementation was initially met with different forms of criticism and scepticism coming from a variety of sources, and which thus had to be dealt with in several ways. Many institutions could learn from this comprehensive approach to overcoming obstacles and, more specifically, resistance to change.	
1.6 Which examples have the most potential to be sustainable (or to create further innovations)?	
Again, the example is 'lecture capture', as it has been implemented gradually and voluntarily. Given that currently it is widely used across the college, it appears that lecturers are acknowledging its benefits and want to engage with it. Furthermore, given the pressure coming from students (described above), it appears that students also regard it as advantageous.	
2.1 Which characteristics of HEI's governance, management, organisational structure, and human resource management are helpful in promoting the implementation of innovations that had value?	
Governance	Student pressure, combined with evidence of effectiveness (proven by the aforementioned evaluations) was used by the Vice Principal for Teaching and Learning, together with colleagues from the Learning Institute, to push for a wider implementation of the initiative. Those efforts have consequently led to the implementation of 'lecture capture' in many more lecture halls over the course of the past three years. As a result, currently approximately 60 of the college's lecture halls have this toolkit in place. Furthermore, lecture rooms which are too small to have the full kit installed have access to a mobile version of the kit. Queen Mary, University of London (n.d.) described its strategy in its 2010–2015 strategic plans.
Management	'Lecture capture' was implemented by being put on the agenda of the Vice Principal for Teaching and Learning together with colleagues from the Learning Institute to push for a wider implementation of the

	initiative. Several structures and units are in place, both at the college level and at the faculty and school level, which (often among other things) are responsible for the design, implementation and support of innovations in teaching and learning. The main centralised unit responsible for initiating innovations in teaching and learning is the Learning Institute. The central structure devoted to online teaching and learning specifically is the e-learning unit, which is a subunit of the Learning Institute. Apart from a centralised e-learning unit, some faculties (for instance, the Faculty of Science and Engineering) and schools (such as the School of History in the Faculty of Humanities and Social Sciences) have their own, in-house e-learning units or specialists who collaborate closely with the members of the central e-learning unit.
Organisational structure	The e-learning unit conducted an evaluation of 'lecture capture' (which included a college-wide survey, a series of focus groups and a cost–benefit analysis). The results of the assessment suggested that the system is regarded as beneficial and useful by students as well as some of the lecturers and that therefore, with the right technology and infrastructure, 'lecture capture' can prove beneficial across all three faculties. As a consequence, it was implemented in 10 lecture halls across the remaining two faculties in 2011.
3.1 What are the obstacles faced by HEIs when dealing in implementation and utilisation of innovation?	
Internal obstacles	The senate of the university (which can be characterised as quite conservative yet very powerful) has initially been rather reluctant to introduce 'lecture capture' in the college. Lecturers have also been rather sceptical because they regarded 'lecture capture' as a threat (i.e. lecturers feared being replaced by a set of pre-recorded lectures). There was a fear among college staff that 'lecture capture' would result in a significant drop in student attendance, especially for morning lectures (which, however, did not occur). Staff struggle to adapt to or accept innovations. Academic staff's reluctance to add an additional component to the already busy curriculum was observed. However, there is a significant heterogeneity in staff perceptions of innovations at Queen Mary, with some staff engaging enthusiastically in innovative learning to enhance the student experience. Fractions in communication with the IT services due to differences in

	approaches and preferences, and a lack of appropriate levels of communication among the different units and departments in the college, were also observed. Also mentioned were some inconsistency with regards to tools and technologies used by the various schools, a mismatch between the rapid pace of technological advancements and the considerably time-consuming process of implementing tools and technologies at the college, a lack of (monetary and human) resources to implement all desired innovations, the complexity of implementing innovations, and the differences in requirements of different faculties and departments that limit the use of a 'one-size-fits-all' approach to the implementation of innovations.
External obstacles	Some of the specialist literature and users have argued that 'lecture capture' has considerable technical limitations, which might discourage staff from engaging with it. For example, the static nature of the cameras implies that teaching staff have to largely stand in one place throughout the lecture because otherwise the cameras might not capture them. While it is possible to zoom out for the cameras to capture a greater part of the lecture hall, this solution is not ideal as this compromises the quality of the recording. Another problem relates to the fact that the writing on chalk blackboards, which are very often used during mathematics lectures, cannot be captured by the cameras. A report commissioned by Universities UK (2013), titled *The Outlook for Higher Education Spending by the Department for Business, Innovation and Skills*, has attempted to assess the outlook for government non-investment spending on higher education from 2013 to 2017–2018. The results of the analysis suggest that the upcoming years are very likely to bring substantial cuts in departmental spending, in order to be able to deliver the level of fiscal consolidation required under the government's current plans. Those cuts are likely to also impact the areas of science and education (which up until now were of policy priority).
3.2 What are the future plans of HEI in the respect of innovations in education provision or governance?	
Queen Mary has got a range of future plans, which include transforming the IT services, increasing the 'lecture capture' service and expanding its transnational education programme. Plans related to the centralised e-learning unit specifically, first and foremost, relate to the transition from focusing on support to focusing on development. In realising the development-related objective, the unit looks to collaborate closer with the various schools as well as the e-learning managers of the schools (provided such exist within the school). Second, the unit also aims to establish an evaluation framework for staff, which will enable staff to self-assess their level of innovation and show them how they can improve, as well as provide them with	

accreditation for their e-learning-related activities. Third, the unit aims at increasing communication and dissemination of e-learning activities across the college, and, fourth and finally, it aims at achieving greater staff engagement and more effective use of the tools offered.
4.1 What should HEI's improve/ change to become, in the next 5–6 years, more innovative/ an innovation leader on the global or EU level?
The college is planning on transforming its IT services and increasing the 'lecture capture' service, so that more video recordings of lectures are available for students. Furthermore, the college also intends to expand its transnational education programme. Queen Mary is planning to switch the focus of the centralised e-learning unit from support to development. It also aims establish an evaluation framework for staff which will enable them to self-assess their level of innovation and will show them how they can improve as well as provide them with accreditation for their e-learning related activities. The college aims to create a framework or structure allowing academics to develop professionally, also through achievements in teaching and learning. The student union also opts for increasing the degree of reward and recognition for teaching achievements and enabling academics to develop professionally through the teaching path. The technology available could be used more effectively and taken further, and more generally the college could engage in further outward-looking activities. This should be feasible given the significant level of support and commitment coming from the college's management for the implementation of innovations in teaching and learning (delivered in various ways and through various channels).

Annex 11: Peer Learning Activity and Training Course, Poitiers, France, 25–27 January 2016

Governance and adaptation to innovative modes of higher education provision. Peer Learning Activity

The ERASMUS-GAIHE project gathers partners from eight countries. Its aims to map and promote best practices of governance and management of innovation in European higher education. Innovation is recognized as an essential lever for the contribution of higher education systems to the knowledge economy and the development of lifelong learning. It is at the centre of the national strategy for higher education in France. The developments of ICTs, the extension of partnerships with business, the new social responsibility of Higher Education Institutions, and the transformation of training and assessment devices for students, are all strategic assets for the modernisation of higher education systems and the construction of a learning society.

Despite some obstacles, drivers for innovation have been tested in European higher education institutions. Some promising practices have been identified by the GAIHE project partners following a literature review, a vast quantitative survey and case studies completed in different countries. These research findings highlighted interesting perspectives on the development of innovations linked to the modularisation and flexibility of training provision, the adoption of digital tools for teaching and learning, the collaborative work and leadership in academic organisations, the implementation of assessments and quality approach. The GAIHE partners are now involved in dissemination activities, promotion and training to executives in higher education institutions:

- vice-chancellors ;
- heads of research unit and deans of faculties ;
- departments of services and support ;
- heads of studies and research in colleges ;
- task officers in modernisation and innovation ;
- project managers in guidance and professional inclusion.

The GAIHE partners have established a dedicated website designed to fulfil these objectives and to provide online resources to interested stakeholders.

The ESENESR (French national college for education management, higher education and research) is associated with this European project, in partnership with the university of Strasbourg and the French Institute of education (IFÉ) - École Normale Supérieure (ENS) of Lyon. The implementation of innovations requires a reflection on the work and skills of administrative and pedagogical management in higher education institutions. This then leads to a number of vital questions:

- How can a culture of cooperation develop among heterogeneous professional spaces?
- How can knowledge and skills be shared to work more effectively?
- What type of leadership can be established by these dynamics of innovation and change?
- How can we redefine this environment of actors>How are transversal skills managed?
- How can the area of pedagogy and learning be investigated to improve student achievement and inclusion?

The GAIHE project addresses these issues by establishing an inventory of best practices in Europe. The aim of these two days is to share several experiences on change and innovation, to create a professional dialogue, and to provide resources and tools. The event includes French and European expert speakers, thematic seminars and workshops to facilitate exchange of knowledge and skills among professionals.

Contributors

Cécile McGrath

Dr Cecile Hoareau McGrath is a Senior Analyst at RAND Europe. She has worked for the European Commission, the European Parliament, the Leadership Foundation, the British Council, national governments and the private sector. Her current or recently completed projects include an international review of learning gains for the Higher Education Funding Council for England, and an international review of admission practices to higher education for the European Parliament. Cecile's publications and research interests include the impact of globalization and Europeanization on higher education policy, higher education financing and governance, as well as comparative public policy, as well as rational choice and deliberative theories. Her work has been published in various languages, including French and Spanish and has lectured internationally. In addition to her position at RAND Europe, Cecile is a research fellow of UNU-MERIT and research associate at the University of California Berkeley, where she was a Fulbright postdoctoral research scholar. She previously taught political science at the London School of Economics, where she wrote her doctoral thesis on the European higher education reforms, the Bologna process. Dr Hoareau also holds a MsC from University College London and a first degree from the *Institut d'Etudes Politiques* in France.

Romuald Normand

Romuald Normand is Fulbright fellow and full-time professor of sociology at the University of Strasbourg (Faculty of Social Sciences, Research Unit SAGE: Societies, Actors and Government of Europe) and convenor of the network "Sociologies of European Education" (European Association of Educational Research). He is member of the editorial board of the British Journal of Sociology of Education. His research interests are on European education and Higher Education policies. He is currently involved in a Marie-Curie project UNIKE (Universities in Knowledge Economies) and an ERASMUS project (Governance and adaptation to innovative modes of higher education provision).

Jo Ritzen

Jo Ritzen is professorial fellow in the International Economics of Science, Technology and Higher Education at UNU-MERIT and the Maastricht Graduate School of Governance. He was previously Dutch Minister for Education and Science, then President of Maastricht University, and is now the driving force behind 'Empower European Universities' (EEU), an NGO which aims to ramp up innovation and internationalisation at universities and research institutes across Europe

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Nicole Rege-Colet

Nicole Rege Colet is the director of the newly-founded *Institut de développement et d'innovation pédagogiques* (Idip) of the University of Strasbourg. As professor in educational psychology she has carried out her career exploring educational development in higher education, with an active role in the Bologna process. Her work is mostly about implementing innovative teaching and learning and supporting academics to adapt to the new environments and engage in professional and organisational development. Drawing on her interdisciplinary and intercultural experience, her recent inquiries look at leadership development and change processes. She is interested in understanding how people, communities and organisations can shift and engage collectively in meaningful and socially responsible projects letting go of old paradigms of thought.

Stéphan Vincent-Lancrin

Stéphan Vincent-Lancrin is a Senior Analyst, Project Leader and Deputy Head of Division at the Organisation for Economic Co-operation and Development (Directorate for Education and Skills). He is currently responsible for two projects of the OECD Centre for Educational Research and Innovation (CERI): "Innovation Strategy for education and training" and "the future of higher education". His current interests cover the nature of education and skills that matter in innovation and knowledge societies; the fostering and assessment of students' creativity and critical thinking; the determinants of innovation-friendly ecosystems in the education sector; the measurement of innovation in education. In addition to many articles and book chapters, he has co-authored many OECD reports. The most recent ones are: Ensuring Quality in Cross-Border Higher Education (2015), Measuring Innovation in Education: A New Perspective (2014), Art for Art's Sake. The impact of arts education (2014), Review of the Italian Strategy for Digital Schools (2013), Sparking Innovation in STEM education trough Technology and Collaboration (2013). Before joining the OECD, he has worked as lecturer and researcher in economics at the University of Paris-Nanterre and the London School of Economics. He is a Marie Curie Fellow and a 2007 Fulbright New Century Scholar. He holds a PhD in economics, a business school diploma, and a master's in philosophy.

Guillermo Bernabeu Pastor

Former member of the Bologna Expert Team (Spain), Former Vice-Rector for Quality Assurance, Study Programmes and Innovation, Former General Secretary, University of Alicante. Adviser of General Directorate for Universities (Ministry of Education), Representative of Spain in the BFUG, Representative of Spain in the Cluster on Modernisation of Higher Education (European Commission). He has participated in the process of evaluation of education institutions in various countries, management and implementation of education policies, curricular reform, governance reform, funding reform. He is member of the commission for the development of the higher education qualifications framework of Spain. He has collaborated with the National Agency for Quality Assessment and Accreditation of Spain (ANECA) in many national and international projects. He also involves in the Tempus Project DOQUP, ALTAIR, FOCUS, DEMETER, TLQAA.

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Robin Middlehurst

Robin is Professor of Higher Education and External Policy Adviser in the Vice Chancellor's Office, Kingston University London. She also serves as a policy adviser to the Higher Education Academy, is a trustee of the British Accreditation Council and Advisory Board member of the Observatory on Borderless Higher Education. Robin's research includes borderless education and internationalisation, governance and leadership, quality assurance and enhancement in higher education. Previous roles have included:Director, Strategy, Research and International at the Leadership Foundation; Co-designing and co-directing the UK's Top Management Programme for Higher Education; Director of the Quality Enhancement Group of the Higher Education Quality Council (now QAA); Academic posts at the University of Surrey and Institute of Education, London; Serving as a governor in two UK universities. Professor Middlehurst has published extensively on higher education policy and management and undertakes consultancy for governments and higher education agencies in the UK and overseas.

Marko Marhl

Full Professor of Physics at the University of Maribor (UM). He works in the field of systems dynamics, systems analyses and modelling. In particular, his expertise is in systems approach studying physical processes in biological cells and tissues. He published a body of contributions on inter- and intra-cellular signalling, in particular calcium oscillations with a given potential of clinical applications concerning airway smooth muscle cells and beta cells in pancreas. He has experience in coordinating national and international projects. He was a vice-rector for international affairs at the UM. Now he is the dean of the Faculty of Education at the UM. He is a member of editorial boards of peer-reviewed national and international journals, he acts as a reviewer for highly ranked international journals, and he is a member of international associations, he is actively involved in quality development of universities and also university rankings, he is a member of the Executive Committee of IREG-Observatory.

Emma Harte

Emma Harte is an Associate Analyst at RAND Europe, focusing on studies in education, workplace development and social inclusion. Prior to joining RAND, she held a teaching position at the *Université de Toulouse II*. Emma has an MSc in Comparative European Politics from Trinity College, Dublin.

Guy Haug

Guy is one of the architects of the European Higher Education Area. He was centrally involved in the design and inception of the ERASMUS and TEMPUS programmes of the EU, the Bologna process for the internal convergence and external competitiveness of European higher education and the EU's agenda for the modernisation of European universities. He is currently advisor to the Rector of the Valencia University of Technology in Spain and to several international organisations (EU, OECD, World Bank, UNESCO), university networks, governments and quality assurance agencies around the world

Indra Dedze

She has a PhD degree in the International Comparative Education from Stockholm University. Worked for several NGO's - the Soros Foundation — Latvia, Centre for Public Policy PROVIDUS in Latvia and Open Society Institute in Budapest. In all these organizations was responsible for research projects in the field of Education Policy including cooperation with the NGO networks in Central Asia and Eastern Europe and international organizations. 2004/2005 as a Fulbright fellow I spent at Vanderbilt University, USA and carried out research in evaluation of higher education management. From 2009 to 2013 was a National research coordinator for Latvia for the EUROSTUDENT IV project which collects comparable data on the social and economic conditions of student life in Europe

Anna Lasakova

PhD., she works currently at the Faculty of Management at Comenius University in Bratislava. She teaches Organizational Behavior, Expatriate Management, Introduction to HRM, Leadership, Managerial Ethics, Business Ethics in HRM, and Corporate Codes of Ethics. As for her research activities, she focuses mainly on intercultural management, leadership and managerial ethics. Besides her teaching experiences, she served as a guest lecturer also at universities in Germany, Poland, and Romania. She has worked in several research projects, both in Slovak as well as international scientific teams.

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Lubica Bajzíková

Lubica is a full professor at the Faculty of Management at Comenius University in Bratislava, Slovak Republic. She teaches Human Resource Management, Compensation Systems, International Human Resource Management, and Organizational Cultures. Her research interests encompass diversity management issues within the HRM, new trends and innovative aspects of the HRM, flexible work organization, and specifics of HRM in the CEE region. Furthermore, she is interested in the research of the quality assurance in education systems and higher education innovations. She has numerous international experiences within her research and teaching assignments (e. i. Cornell University, USA, Montclair State University, USA, University of Padova, Italy, University of Udine, Italy, Université Catholique de Louvain, Belgium). Currently she holds the position of the Vice-dean for Research at Faculty of Management, Comenius University in Bratislava, and the position of the Head of Department of management at Faculty of Management, Comenius University in Bratislava.

Sonia Leverd

Sonia Leverd holds a postgraduate degree in political science. In addition to teaching and publishing, Sonia has also worked for the French foreign affairs, in Berlin she was Attaché of the academic cooperation (2006-2010), in Amsterdam she was adjunct Director of the French Cultural Institute (2010-2014). Then she joined ESENESR as a higher education training advisor at the Departement of higher education, research and senior education officer training. She has recently published on Higher Education issues: *Mutations de l'enseignement supérieur et internationalisation*. Change in Higher Education and Globalization (Bruxelles, De Boeck, 2011); *Les nouveaux territoires du droit*, (L'Harmattan, collection Logiques Juridiques, 2013).

Solange Pisarz

Solange Pisarz studied at the *Ecole Normale Supérieure*. She holds a postgraduate degree in international economic law and passed the *agrégation* competitive examination. In addition to teaching, Solange has also worked at the Council of Europe. At CampusFrance, she was coordinator for Europe: responsible for managing international projects, organizing workshops or seminars and participating in international conferences. In addition, Solange was also responsible for researching CampusFrance publications on internationalisation questions and published several articles on rankings and on international student mobility. Joining the AERES (now HCERES- French High Council for the Evaluation of Research and Higher Education), she had first started at the Institution Department, where she has organised evaluations of institutions. Solange is currently working as Project Manager for European and international Affairs. Her main tasks include international cooperation, drafting projects reports and proposals, management of European and International projects.

Muriel Poisson

She is leading the Research and Development Team at IIEP. She is also the task manager of the Institute's project on Ethics and Corruption in Education. She is responsible for research and training activities dealing with a variety of topics on the issue, such as the use of open education data, public expenditure tracking surveys, teacher codes of conduct, and academic fraud. In this capacity, she trained more than 2,000 people on how to design and implement diagnostic tools aimed at assessing distorted practices in the use of education resources; and on how to design and implement strategies to improve transparency and accountability in education. She also provides technical assistance in the area of transparency and integrity planning, for instance to national teams in charge of the development of an integrity risk assessment, a PETS, or a code of conduct. Finally, she is managing the ETICO information platform, a dynamic clearinghouse for all information and activities related to transparency and accountability issues in education". Prior to this, she was involved in the preparation of studies on non-formal education in Asia, and on education in cities. She participated in the organization of meetings on curriculum change for the International Bureau of Education (IBE) in Geneva. She was also involved in activities led by UNESCO within the framework of the Dakar follow-up. Muriel has authored and co-authored a number of articles and books, including: Corrupt Schools, Corrupt Universities: What Can Be Done?' (UNESCO Publishing).

Program

Monday, January 25th, 2016

10:00 - 11:00 Accueil

11:00 - 12:00 Meeting on the GAIHE members

12:00 - 14:00 Lunch

14:00 - 14:15 Welcome

Jean-Marie PANAZOL,
Head of the ESENESR
Cécile McGRATH,
RAND Europe

14:15 - 17:15 Plenary session :
The State of Art: European research and Reflections about Innovation in France

Chair :
Romuald NORMAND,
University of Strasbourg

14:15 - 14:45 The challenge for European universities to innovate.

Learning objectives :

- to become familiarized with the evolutions of Higher Education Policies related to innovation in Europe ;
- to compare innovations in higher education systems in Europe ;
- to improve skills and knowledge as a Higher Education policy-maker and manager.

Jo RITZEN,
School of Governance,
University of Maastricht

14:45 - 15:30 Innovative teaching and learning practices: stepping beyond the boundaries

Learning objectives :

- To understand the French Higher Education context and its challenges ;
- To understand the complexity of Higher Education Governance and its links with innovations ;
- To increase knowledge about innovative practices.

Nicole REGE-COLET,
University of Strasbourg

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15:30 - 15:45	Coffee Break
15:45 - 16:30	**Stimulating Innovation in Higher Education** **Learning objectives :** • **to become familiarized with the evolutions of Higher Education Policies related to innovation at global level ;** • **to compare innovations in higher education systems at global level ;** • **to improve skills and knowledge as a Higher Education policy-maker and manager.** **Stéphan Vincent-LANCRIN,** *Organisation for Economic Co-operation and Development (OECD)*
16:30 - 17:15	**The Challenge of Digital Technologies and Innovation in French Higher Education** **Learning objectives:** • **to present the new organization of the DGRI at its digital mission ;** • **to present the relations of DGRI and digital mission with Universities and Grandes Écoles (colleges) ;** • **to reflect on importance and limitations of digital issue in the development of innovation in French Higher Education system.** **Franck ESTAY,** *Direction Générale de l'Enseignement Supérieur et de l'Insertion Professionnelle (DGESIP) MENESR*
19:00	Dinner

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Tuesday, January 26th, 2016

09:00 - 12:00 Plenary session

Leadership and Innovations: what local Governance?

Chair :
Guillermo BERNABEU,
University of Alicante, Spain

09:00 - 10:15 **Leadership and innovation in higher education: case studies from the UK?**

Learning objectives :

- **to understand the post-bureaucratic regimes of Higher Education Systems ;**
- **to become familiarized with the current theories of management and leadership of Higher Education Institutions ;**
- **to develop reflexivity and knowledge about managerial practices.**

Robin MIDDLEHURST,
Kingston University, UK

10:15 - 10:30 Coffee Break

10:30 - 12:30 Workshops with policy-makers and executives from universities and "Grandes Écoles" (Colleges)

Participants will attend one of at least two workshops taking place in parallel on the following topics :

Regional Governance and the Development of Innovation ;

Chair :
Marko MARHL,
University of Maribor, Slovenia

Leadership, Innovation and Creativity

Chair:
Romuald NORMAND,
University of Strasbourg

Learning objectives:

- **to develop a common understanding of the links between governance, innovation and leadership ;**
- **to reflect about the impact of networking and innovation for policy-making ;**
- **to elaborate and exchange on promising practices of governance ;**
- **to share knowledge about policy-making, governance and management of Higher Education Institutions.**

12:30 - 14:00 Déjeuner

14:00 - 17:30 Plenary session

Concrete Innovations in European Higher Education

Chair :
Emma HARTE,
Rand Europe

14:00 - 15:00 The Future of Higher Education and the Place of Innovations in Europe

Learning objectives:

- **to discuss possible scenarios in the evolution of higher education systems including more creativity and innovation ;**
- **to become familiarized with the current innovations in Europe ;**
- **to develop an interest in emerging practices of innovative management and governance.**

Guy HAUG,
Expert of the European Higher Education Area,
Advisor to the Valencia University of Technology

15:00 - 15:15 Coffee Break

15:15 - 16:15 Case Studies as the Detector of Agents of Changes in Higher Education

Learning objectives:

- **to present common features among innovative organisations: regional and international cooperations ;**
- **to reflect about context diversity and "transportability" of innovations ;**
- **to determine the rationality of different modes of resistance.**

Indra DREDZE,
Université de Lettonie

16:15 - 17:15 Selecting Promising Practices

Learning objectives :

- **to study some specific plans on innovative performances ;**
- **to analyse advantages and disadvantages of the creation of new supporting innovation structures ;**
- **to present some examples of planning oriented towards the ICT skills dissemination within teaching-learning processes.**

Anna LAŠÁKOVÁ,
Ľubica BAJZÍKOVÁ,
Comenius University of Bratislava

19:00 Dinner

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Wednesday, January 27th, 2016

09:00 - 12:00 Plenary session

How to assure Quality, Ethics and Sustain innovative Practices?

Chair :
Sonia LEVERD,
Higher Education, Research and Senior Education Officer Training, ESENESR

09:00 - 10:00 **Trends and challenges for quality assessment**

Solange PISARZ,
French High Council of Assessment of Higher Education and Research

10:00 - 10:45 Self-assessment of the training course

10:45 - 11:00 Coffee break

11:00 - 12:00 **Ethics and innovations in Higher Education**

Learning objectives :

- **to be able to consider some perspectives in ethics of Higher Education management ;**
- **to master new skills in ethical dimensions of innovations ;**
- **to exchange about the challenges of ethics in the Knowledge-based Economy.**

Muriel POISSON,
International Institute of Education Planning UNESCO

12:00 - 12:30 Conclusion

Cécile McGRATH,
RAND Europe

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Annex 12: Self-assessment tool for higher education institutions

One of the outcomes of our projects was the design of a self-assessment tool. This Annex explains the self-assessment tool before presenting the questionnaire.

A4.1 Background and method statement

Although not originally envisaged by the project outcomes, it was considered as necessary by the partners to develop a user friendly tool that would allow higher education institutions to reflect on and help assess the level of innovation embedded into the fabric of HEIs, in order to measure the perceived institutional commitment and strategies for innovation, as well as the institutional and financial support for innovation. Through this self-assessment tool the HEIs will be able:

- To determine their level of commitment towards strengthening an innovative culture that is delivering value for teachers, students, staff, partners and stakeholders; and

- To indicate areas for further development.

The design of the tool was also preceded by a review of some relevant reports: Eurydice (2008), Fielden (2008), National Centre for Entrepreneurship in Education (n.d.). The tool was influenced by a similar tool for entrepreneurship promoted by the European Commission and the Organisation for Economic Cooperation and Development, called HEInnovate. HEInnovate was launched in 2014. This other tool was used to validate relevant categories of questions.

The purpose of the review was to identify similar instruments that could inspire the development of the tool.

A4.2 Intended target audience and accessibility

The target audience of the self-assessment tool includes HEIs employees responsible for strategic planning and decision making (and, more broadly speaking, those individuals who are responsible for management and governance within the institution). Our dissemination list includes major stakeholders and a range of HEIs across Europe.

The use of the tool, however, should not be limited solely to the duration of the project and to the aforementioned group as other HEIs as well as other staff can also benefit from it. In order to maximise the reach of the tool across Europe it has been translated and made available on the project website.

A4.3 Purpose of the tool

It is important to note that the self-assessment tool should not be treated as a benchmarking instrument but as a means for individual HEIs to determine their perceived strengths and weaknesses in relation to factors identified in this study (and in the broader literature) which appear to have been barriers and facilitators to innovation. The tool is intended to support HEIs to think of ways forward which might enable them to become more innovative. The self-assessment tool is based on the understanding that what is best for a particular institution in terms of innovation, management and governance depends on its context and characteristics.

The self-assessment tool aims to serve as one way of mapping the level of perceived innovation embedded into the fabric of a given HEI, the perceived institutional commitment and strategies for innovation, as well as the institutional and financial support to innovation.

A4.4 Structure of the self-assessment tool

The self-assessment tool asks about perceptions on a given HEI in the following five areas:

1. Level of institutional commitment and existence of an institution-wide strategy regarding innovation
2. Institutional support for innovations
3. Financial incentives for innovative objectives and ideas
4. Organisational changes for innovation support
5. Evaluation of the innovations and innovative activities

These areas (presented in more detail below) are those that this study has identified as potentially important barriers or facilitators for innovation, as described in Section 4.

The first section looks at whether innovation is a major part of the university strategy and whether the strategy is being updated on a regular basis to keep up with current trends. Furthermore, it also investigates whether there is a perceived high level (i.e. managerial) commitment to implementing this strategy and whether the institutional structures are adapted to enable its delivery. Finally, the section also asks whether the strategy is communicated widely and clearly across the higher education institution. *The results from this section help HEIs understand the extent to which there is perceived high level support for implementing innovation in the HEI and the perceived strengths and weaknesses of any institution-wide strategy.*

The second section concentrates on investment in staff development in order to support the innovation agenda and mechanisms in place within the HEI to break down traditional boundaries and foster new relationships. *The purpose of this section is to allow HEIs to map the extent of institutional support intended to to facilitate the development and implementation of innovations.*

The third section focuses on the financial aspects and more specifically on whether there are funding sources and / or investments in place (including those provided by external stakeholders) to support the innovation objectives. *This section allows HEIs to map the extent of financing mechanisms in place to incentivise innovative behaviour, and their perceived effectiveness.*

The fourth section looks at organisational aspects and changes as the creation of senior positions (i.e. for heads of departments or faculties) with a clear mandate regarding innovation, the existence of support units for innovations and, finally, the extent to which the institution can initiate organisational changes (e.g. set up a new unit) on its own. *Thus, this section enables HEIs to see whether organisational changes intended to specifically support innovation have been implemented.*

Lastly, the fifth section inquires whether the institution evaluates its innovations and more generally its innovative activities by assessing the impact of its innovation strategy, as well as its innovative learning and teaching. *The purpose of this section is for HEIs to examine whether they have mechanisms in place to monitor whether their innovative activities reach their intended objectives .*

The tool is built on a scale used to indicate the degree to which the respondent agrees or disagrees with the statement provided (Likert scale). Higher scores indicate (based on the findings from this study, including the wider literature), those practices etc. that are more likely to support innovation.

Self-assessment tool for HEIs

Introduction

This self-assessment tool is one of the outputs of the Governance and Adaptation to Innovative Modes of Higher Education Provision (GAIHE) project. The GAIHE project seeks to gather evidence about how European Higher Education Institutions (HEIs) develop and strengthen their innovative capacity, and how they adapt their governance and management to better face challenges. The project specifically looks at:

- How HEIs innovate new modes of provision and modernise their curricula, while respecting the quality of higher education;
- How HE governance and management is adapting to these new modes of provision.

GAIHE also aimed to promote the dissemination of best practices in governing HEIs.

A description of the project and its methods can be found in the final report- - see McGrath, C., J. Hofman, L. Bajzikova, E. Harte, A. Lasakova, P. Pankowska, S. Sasso, J. Bélanger, S. Florea, J. Krivograd. 2016. Governance and Adaptation to Innovative Modes of Higher Education Provision. Research report. Santa Monica, Calif.: RAND Europe.

Purpose of the Tool

The purpose of the self-assessment tool is to reflect on and help assess the level of innovation embedded into the fabric of HEIs, in order to measure the perceived institutional commitment and strategies for innovation, as well as the institutional and financial support for innovation. Through this self-assessment tool the HEIs will be able:

- To determine their level of commitment towards strengthening an innovative culture that is delivering value for teachers, students, staff, partners and stakeholders; and
- To indicate areas for further development.

It is important to note that the self-assessment tool should not be treated as a benchmarking instrument but as a means for individual HEIs to determine their perceived strengths and weaknesses in relation to factors identified in this study (and in the broader literature) show to have been barriers and facilitators to innovation. The tool is intended to support HEIs to think of ways forward which might enable them to become more innovative. The self-assessment tool is based on the understanding that what is best for a particular institution in terms of innovation, management and governance depends on its context and characteristics.

The self-assessment tool aims to serve as one way of mapping the level of perceived innovation embedded into the fabric of a given HEI, the perceived institutional commitment and strategies for innovation, as well as the institutional and financial support to innovation.

The target audience of the self-assessment tool includes HEIs employees responsible for strategic planning and decision making (and, more broadly speaking, those individuals who are responsible for management and governance within the institution).

Design of the Tool

The design of the tool was also preceded by a review of some relevant reports: Eurydice (2008), Fielden (2008), National Centre for Entrepreneurship in Education (n.d.). The tool was influenced by a similar tool for entrepreneurship promoted by the European Commission and the Organisation for Economic Cooperation and Development, called HEInnovate. HEInnovate was launched in 2014. This other tool was used to validate relevant categories of questions. The purpose of the review was to identify similar instruments that could inspire the development of the tool.

The first version of the self-assessment tool was peer reviewed by the partners before the document was finalised and tested with participants to the training course in Poitiers.

Summary of the sections of the Tool

The self-assessment tool is divided into 5 sections asking about perceptions in the following areas:

1. Existence of an innovation agenda in the HEI
2. Institutional support for innovation
3. Financial incentives for innovative objectives and ideas
4. Organisational changes for innovation support
5. Evaluation of the innovations and their impact.

These areas are those that the GAIHE study identified as potentially important barriers or facilitators for innovation (see the final report of the study for more detail – McGrath et al. 2016).

The first section looks at whether innovation is a major part of the university strategy and whether the strategy is being updated on a regular basis to keep up with current trends. Furthermore, it also investigates whether there is a perceived high level (i.e. managerial) commitment to implementing this strategy and whether the institutional structures are adapted to enable its delivery. Finally, the section also asks whether the strategy is communicated widely and clearly across the higher education institution. *The results from this section help HEIs understand the extent to which there is perceived high level support for implementing innovation in the HEI and the perceived strengths and weaknesses of any institution-wide strategy.*

The second section concentrates on investment in staff development in order to support the innovation agenda and mechanisms in place within the HEI to break down traditional boundaries and foster new relationships. *The purpose of this section is to allow HEIs to map the extent of institutional support intended to to facilitate the development and implementation of innovations.*

The third section focuses on the financial aspects and more specifically on whether there are funding sources and / or investments in place (including those provided by external stakeholders) to support the innovation objectives. *This section allows HEIs to map the extent of financing mechanisms in place to incentivise innovative behaviour, and their perceived effectiveness.*

The fourth section looks at organisational aspects and changes as the creation of senior positions (i.e. for heads of departments or faculties) with a clear mandate regarding innovation, the existence of support units for innovations and, finally, the extent to which the institution can initiate organisational changes (e.g. set up a new unit) on its own. *Thus, this section enables HEIs to see whether organisational changes intended to specifically support innovation have been implemented.*

Lastly, the fifth section inquires whether the institution evaluates its innovations and more generally its innovative activities by assessing the impact of its innovation strategy, as well as its innovative learning and teaching. *The purpose of this section is for HEIs to examine whether they have mechanisms in place to monitor whether their innovative activities reach their intended objectives.*

The tool is built on a scale used to indicate the degree to which the respondent agrees or disagrees with the statement provided (Likert scale). Higher scores indicate (based on the findings from the study, including the wider literature), those practices etc. that are more likely to support innovation. The descriptive value of each number is as follows:

1 = strongly disagree

2 = disagree

3 = neither agree nor disagree

4 = agree

5 = strongly agree

QUESTIONNAIRE

1. EXISTENCE OF AN INNOVATION STRATEGY IN THE HEI WHICH MAY TAKE A FORM OF A STRATEGIC OR CORPORATE PLAN

a. Does a strategy which includes a vision for innovation exist in the HEI?

☐ = yes
☐ = no → (Skip to Section 2)
☐ = don't know → (Skip to Section 2)

b. [If a Strategy exists] **The innovation strategy includes clear objectives and indicators.** Please select the extent to which you agree, 1 being 'strongly disagree', 5 being 'strongly agree'.

1	2	3	4	5	Don't know

c. [If a Strategy exists] **Specific innovative activities are mentioned in the HEI strategy.** Please select the extent to which you agree, 1 being 'strongly disagree', 5 being 'strongly agree'.

1	2	3	4	5	Don't know

d. [If a Strategy exists] **This strategy has been discussed and has been agreed upon and is known across the institution.**
For each statement please select the extent to which you agree, 1 being 'strongly disagree', 5 being 'strongly agree'.

- The innovation strategy has been communicated to all stakeholders within the HEI (the academic, technical and support staff).

1	2	3	4	5	Don't know

- The implementation of the strategy has been agreed upon institution wide.

1	2	3	4	5	Don't know

- The innovation strategy is understood as a priority by academic, technical and support staff.

1	2	3	4	5	Don't know

- The innovation strategy is understood as a priority by students and/or their representatives.

1	2	3	4	5	Don't know

2. INSTITUTIONAL SUPPORT

For each statement please select the extent to which you agree, 1 being 'strongly disagree', 5 being 'strongly agree'.

a. The head of the HEI/senior management actively supports the innovation strategy of the HEI:

- There is an official commitment to the implementation of the strategy connected with the innovation agenda.

1	2	3	4	5	Don't know

- The senior management level and/or head of HEI have identified examples of good practice in innovation

1	2	3	4	5	Don't know

- The senior management level and/or head of HEI support the diffusion of good practices in innovation.

1	2	3	4	5	Don't know

- The HEI head/senior management support any adaptation necessary to the management structure of the institution to efficiently implement its strategy.

1	2	3	4	5	Don't know

- The strategy is shared and supported by internal communication efforts.

1	2	3	4	5	Don't know

b. The HEI acknowledges that staff are a key resource in innovation activities:

- The HEI invests in staff development to support its innovation agenda:

1	2	3	4	5	Don't know

- Professional development plans to support the innovation agenda are included in a formal policy for career development for all staff which addresses the innovation agenda and is tailored to their own key goals (e.g. human resource/corporate plan/employment plans).

1	2	3	4	5	Don't know

- The HEI provides opportunities to make staff more aware of the innovation agenda and of the importance of the innovative activities for the HEI, for example, through training, workshops, etc.

1	2	3	4	5	Don't know

c. There are mechanisms in place for fostering new relationships - bringing internal stakeholders together (staff and students) and building synergies between them:

- The HEI regards staff and students as important internal stakeholders supporting the innovation agenda.

1	2	3	4	5	Don't know

- The HEI works together across functions and departments to create synergies.

1	2	3	4	5	Don't know

- The HEI has mechanisms in place to leverage internal knowledge and resources through, for example, shared facilities across faculties, student-staff structures, interdisciplinary structures, cross-faculty teaching and research groups.

1	2	3	4	5	Don't know

- The HEI enables students to get involved with the innovation processes of HEIs via their representatives.

1	2	3	4	5	Don't know

3. FINANCIAL INCENTIVES

For each statement please select the extent to which you agree, 1 being 'strongly disagree', 5 being 'strongly agree'.

a. The HEI supports innovation through a number of measures:

- The HEI invests in its innovation activities through a financial strategy which relies on the diversification of funding sources (including private and public funds and donors).

1	2	3	4	5	Don't know

- The HEI invests in its innovation activities through a financial strategy which relies on the reduction of dependency on state/ public funding.

1	2	3	4	5	Don't know

- The HEI brings in additional funding which is intended for investment in innovation from/through "in kind" services, such as sharing space and facilities with external stakeholders.

1	2	3	4	5	Don't know

- The HEI brings in additional external funding which is intended for investment in innovation via revenues generated from its entrepreneurship activities.

1	2	3	4	5	Don't know

- The HEI places an emphasis on efficient use of resources when implementing innovative practices.

1	2	3	4	5	Don't know

- The HEI has measures to ensure financial accountability (i.e. monitors value-for-money, improves transparency) when implementing innovative practices.

1	2	3	4	5	Don't know

- The HEI offers rewards for innovative staff (e.g. prizes or bonuses).

1	2	3	4	5	Don't know

- These rewards for innovative staff are clearly advertised by the HEI management.

1	2	3	4	5	Don't know

4. ORGANISATIONAL CHANGES FOR INNOVATION SUPPORT

For each statement please select the extent to which you agree, 1 being 'strongly disagree', 5 being 'strongly agree'.

a. Senior positions (i.e. for heads of departments or faculties) with a clear mandate regarding innovation have been created:

- The HEI has specific structures in place, which facilitate innovation development across all activities.

1	2	3	4	5	Don't know

- The HEI has Deans, Vice Chancellors, or other senior staff who are at least responsible for innovation at the unit/faculty level.

1	2	3	4	5	Don't know

- The HEI has innovation ambassadors (i.e. people who support innovation among students).

1	2	3	4	5	Don't know

- The HEI has mechanisms in place for feedback from staff and students and adjustment of strategies and courses in response to such feedback.

1	2	3	4	5	Don't know

- The staff and student structures can be supported by investment funds and other internal exchange platforms.

1	2	3	4	5	Don't know

b. Support units for innovations in teaching and learning exist:

- The HEI provides support (e.g. in the form of teaching and learning centres or contact points) for individuals and groups to move from innovative ideas to action.

1	2	3	4	5	Don't know

c. The HEI can initiate organisational changes (for example set up a new unit) on its own initiative:

- The HEI maximises autonomy and individual ownership of initiatives (by overcoming bureaucratic barriers).

1	2	3	4	5	Don't know

d. The HEI supports links with external stakeholders, for example, through joint positions, or outreach support.

1	2	3	4	5	Don't know

5. IMPACT AND EVALUATION

a. Does the HEI measures impact of the implemented innovation practices?

☐ = yes
☐ = no → (Skip to point C)
☐ = don't know → (Skip to point C)

b. The HEI measures the extent to which innovations that are implemented or tested within the HEI have achieved their purpose.
For each statement please select the extent to which you agree, 1 being 'strongly disagree', 5 being 'strongly agree'.

- The HEI measures the impact of innovations which aim to change teaching and learning methods.

1	2	3	4	5	Don't know

- The HEI measures the impact of innovations which aim to change institutional management.

1	2	3	4	5	Don't know

- The institution measures the impact of innovations which aim to change/affect education in the HEI.

1	2	3	4	5	Don't know

- The HEI measures the impact of innovations which aim to change relationships with external stakeholders.

1	2	3	4	5	Don't know

- The HEI measures the impact of innovations that aim to contribute to internationalisation

1	2	3	4	5	Don't know

- The HEI measures the impact of innovations which aim to promote specific characteristics in students, e.g. age, physical ability, religion, race, ethnicity, gender, etc.

1	2	3	4	5	Don't know

c. Does the HEI conduct regular impact evaluations of its innovation strategy?

☐ = yes
☐ = no → (Finish here and sum up your points)
☐ = don't know → (Finish here and sum up your points)

d. [If evaluations are conducted] **These evaluations are carried out according to the innovation strategy's objectives and performance indicators.**

1	2	3	4	5	Don't know

e. [If evaluations are conducted] **These evaluations are available to the HEI academic, technical and support staff.**

1	2	3	4	5	Don't know

f. [If evaluations are conducted] **These evaluations are made public.**

1	2	3	4	5	Don't know

g. [If evaluations are conducted] **The evaluation results are discussed during meetings on the senior management level of the HEI.**

1	2	3	4	5	Don't know

h. [If evaluations are conducted] **The results of the evaluation feed into a process to improve existing performance.**

1	2	3	4	5	Don't know

Annex 13: Quality assurance protocol

RAND Europe and Maastricht Graduate School of Governance, as co-leading institutions of the project, assure the highest professional standards throughout the design, delivery and implementation of the project *Governance and adaptation to innovative modes of HE provision*.

The purpose of quality assurance at RAND Europe is to help ensure that every research project, and its associated products, meets or exceeds RAND's standards for quality. This helps to ensure, and where possible enhance and strengthen, RAND Europe's reputation for quality and objectivity.

RAND Europe has a long tradition of high-quality work, and this is supported by a QA system that itself is subject to frequent review and improvement. The QA system includes a rigorous peer-review procedure for all RAND Europe research outputs and an internationally recognised, high-quality business management practice. RAND Europe's QA system is externally audited every three years by KPMG, and the most recent audit took place in 2015.

A key theme of RAND Europe's QA process runs throughout the duration of the project lifecycle. In particular, every RAND Europe deliverable, including the research reports, will be thoroughly quality assured, and all the data and information used will be thoroughly reviewed, validated and checked for quality. Suitably qualified reviewers are appointed at the outset of the project, including a 'continuous reviewer' who will review both interim and final outputs as well as provide critical challenge during key project decision points. A second, 'output reviewer' is also appointed to provide a second review of final outputs.

- **Quality assurance principles**

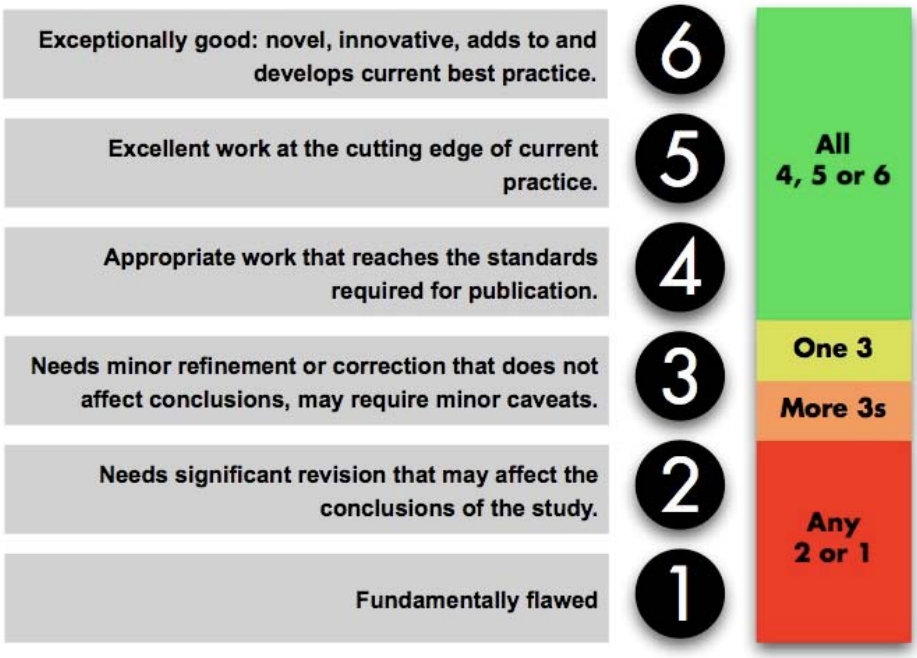
Additionally, RAND Europe has its own set of 10 quality assurance standards that together serve as a tool to indicate the high quality of research outputs important to users of RAND Europe's work.

1. The problem should be well formulated and the purpose of the study should be clear.
2. The study approach should be well designed and executed.
3. The study should demonstrate understanding of related studies.
4. The data and information should be the best available.
5. Assumptions should be explicit and justified.
6. The findings should be important, advance knowledge and bear on important policy issues.
7. The implications and recommendations should be logical, warranted by the findings, and explained thoroughly, with appropriate caveats.
8. The documentation should be accurate, understandable, clearly structured and temperate in tone.

9. The study should be compelling, useful and relevant to stakeholders and other decision makers.
10. The study should be objective, independent and balanced.

To ensure each of these 10 standards are assessed, and an appropriate level of quality is met, reports are scored on a numerical scale from 1 to 6. Only when the reviewer(s) are satisfied that the report has met the minimum standards for publication can it be released. The scoring ladder that defines the interpretation of each numerical score is given in Figure 21.

Figure 21: Quality assurance scoring ladder



Source: taken from RAND Europe's internal QA protocol

➢ Quality assurance system

The quality assurance system for the project *Governance and adaptation to innovative modes of higher education provision* includes three different quality checks:

1. An *a priori control*, based on specific requests of EACEA and on the available initial information. The control has to specify the research objective, its scope, the organisation of the project, as well as the detailed tasks of each work package and the time schedule. This initial check was carried out in the kick-off meeting held in Maastricht on 19 October 2014.

2. A *continuous control* by 1) the WP leaders; 2) the project leader; 3) the independent continuous reviewer on select interim outputs.

3. An *independent* control by the two independent reviewers on the final product, in order to guarantee and improve their standards.

The project leader and the work package leaders are in charge of a **continuous quality control** throughout the design, delivery and implementation of the project. In particular, they are responsible for:

- The respect and implementation of the quality assurance principles set above
- The technical management of the project (time, scope and resources) in order to reach high-quality deliverables
- The implementation of quality control procedures, such as monitoring the task milestones and timely informing the project leader in order to allow for potential actions.

To ensure an effective continuous quality control, the following monitoring mechanisms should be implemented:

- Conference calls among the project partners at different milestones in the project's lifecycle, followed by minutes
- Periodical partner meetings in order to facilitate the discussion and definition of possible solutions to potential quality issues
- Continuous use of web tools and platforms (e.g. Dropbox and other FTPs) to share information and documentation among the different partners

➢ **Quality assurance reviewers**

The independent reviewers will be responsible for:

- A continuous quality review of interim outputs
- A quality review of the final outputs

A short biography of the two reviewers is provided in Box 8 below.

Box 8: Profiles of quality assurance reviewers

Alexandra Pollitt is a Senior Analyst at RAND Europe, where her work focuses primarily on R&D policy, evaluation and mental health. She has recently completed a three-year study looking at the impacts of research in mental health and neuroscience and, among other projects, is currently working on a study estimating the economic returns of investment in musculoskeletal research. Alex has extensive experience in a wide range of qualitative and quantitative methodologies, and has taught research methods, communications and project management internationally. She holds an MA (First Class) in Experimental Psychology from Oxford University. Prior to joining RAND, she worked in impact assessment, monitoring and evaluation of education programmes for an international NGO; in education assessment in the UK; and in developmental psychiatry research at the University of Cambridge. Alex is the independent continuous reviewer for the GAIHE project.

Emma Disley is Associate Director of the Home Affairs and Social Policy Programme at RAND Europe and one of three Quality Assurance Managers for the organisation. Emma is the final output quality assurance reviewer for the GAIHE project.

Emma holds a PhD in criminology from the University of Oxford and a First Class degree in law from the University of Manchester.

As a Quality Assurance Manager, Emma oversees the operation and implementation of the RAND-wide quality assurance process – a system under which all RAND reports and deliverables are subject to peer review – within RAND's European offices. The role has both strategic and operational components: reviewing the quality assurance processes to ensure they meet the needs of the dynamic environment in which RAND operates while complying with corporate standards, and overseeing the day-to-day operation of those processes through appointing peer reviewers, ensuring report authors' responses are comprehensive, and making final sign-off decisions to publicly release project outputs.

As well as managing the QA process, Emma is often called on to act as a reviewer of RAND reports. She has undertaken independent review of numerous projects across the range of disciplines in which RAND works, offering expert review particularly in relation to studies using interviews, surveys and focus groups and comparative methods.

In her own research, Emma has worked extensively on UK and pan-European research projects. Emma has a proven track record in data collection using interviews, surveys and focus groups and managing large research projects. She has extensive expertise in the collection and analysis of qualitative data, including conducting focus groups, interview and stakeholder engagement. Before joining RAND, Emma was a research assistant to the Chief Executive of the UK National Policing Improvement Agency and a research officer to the Chief Constable of Thames Valley Police – a large police force in England.

- **Risk management**

In order to prevent and/or to timely recognise possible events that may compromise the quality of the project, four factors key for an effective design and implementation of the project have been identified: management, time, competences and financial resources.

Consequently, four main categories of risks have been identified:

1. Financial risks: e.g. cost overruns due to change in prices or to project changes

2. Time risks: e.g. delays in delivering the expected products and findings
3. Technical risks: e.g. poor quality of the deliverables or unwillingness of HEIs to collaborate
4. Competence risks: e.g. staffing problems and possible competence conflicts within each organisation

For each of these risks, possible counter measures or mitigation mechanisms should be established by the project manager and by each of the work package (WP) managers.

In particular, each WP manager should:

- Identify the risks that may affect the outcomes of the WP he or she manages
- Assess the risk to understand its likelihood and the degree of impact that it may bring to the project in financial, time or quality terms
- Develop – in coordination with the project manager – and implement appropriate counter measures and mitigation mechanisms

In turn, the project manager should:

- Develop – in coordination with the WP managers – possible mitigation mechanisms
- Control the execution of the corrective actions
- Inform EACEA if the risk is relevant and no significant mitigation action can be taken promptly or during the following project phases.

Annex 14: Survey of higher education institutions

GAIHE questionnaire

Introduction

This project seeks to gather evidence about how European higher education institutions (HEI) develop and strengthen their innovative capacity, and the governance challenges in introducing and leading innovation.

An innovation is an IMPLEMENTED change with an increased ADDED value, replacing an existing product or production method.

Thus, this project looks specifically at:

- How HEIs innovate their modes of educational provision or introduce NEW ways to learn while respecting the quality of higher education;
- How HE enables and facilitates innovation, and the use and consequences of these innovations.

The project will generate evidence and develop evidence-based policy analysis to understand the adaptation to and role of the university leadership in the diffusion of innovative teaching and learning practices and processes. It will also promote the diffusion of best practices in governing HEIs.

The study is being conducted by a consortium of HEIs across Europe, with funding from the EU Lifelong Learning Programme.

This questionnaire forms a vital part of the evidence-gathering part of the study. It seeks to gather the views of HE leaders and senior administrators.

While you are asked to provide some information about your institutional profile, the anonymity of each institution will be respected in all resulting publications.

Please complete this questionnaire as soon as possible, and no later than xxxxxxxxx. If you have any questions, please do not hesitate to contact Mr Barry Colfer.

Your views are essential to the success of this study. Your participation will help identify some of the main issues and challenges being faced by HEIs, discuss how they are being addressed, and help provide the basis for better institutional decision-making and government policy-making.

Thank you very much for your interest and time.

Professor Ellen Hazelkorn, on behalf of the GAIHE Consortium

Instructions

The questionnaire asks five different sets of questions:

1. Innovations in the Modes of Educational Provision
2. Factors Linked with Innovation in Educational Provision
3. Consequences of Innovation
4. Future Challenges
5. Institutional profile

It should take approximately 20 minutes to complete.

To navigate between the pages, please use the PREV and NEXT buttons at the bottom of each page rather than the Back and Forward buttons of your internet browser toolbar.

You are asked to indicate your replies by selecting the appropriate box(-es) or writing in your answers. The standard size text box can accommodate approx. 35 words, and the large size text box can accommodate an unlimited number of words.

Choices within questions are alphabetized and do not reflect any particular priority.

To submit the completed survey, click on the DONE button on the last page. After doing this you will be unable to edit your answers.

If you cannot complete the survey in one sitting, click on the EXIT THIS SURVEY link at the top right corner. Your answers will be automatically saved. You must re-enter the survey from the same computer. When you return you will be taken to the last question you answered and you will be able to amend questions that you have previously answered.

- **Innovations in the Modes of Educational Provision**

This section asks about innovation in educational provision. *An innovation is an IMPLEMENTED change with an increased ADDED value*. In other words, changes in HOW learning takes place or the learning environment is ORGANISED rather than WHAT is learned.

1.1 Has your HEI introduced any changes or innovations in the organisation of educational provision since 2008?

Yes or No

If Yes – then answer questions below. If No – then go to Question 2.4

1.2 What innovations in education provision has your HEI introduced?

CHANGE/INNOVATION	
PROGRAMME ORGANISATION	To all items in table 1 Scale 0–3: 0 = Not introduced (No programmes) 1 = Module level (Some programmes) 2 = Programme level (Many programmes) 3 = Institutional level (All programmes)
Flexible Delivery and Assessment Options	
Module Choice within Programme	
Module Choice across Disciplines	
Engagement with External Communities Locally	
Engagement with Other Institutions Internationally	
Online Programmes Administration/Support	
Year-Round Teaching with Introduction of Summer Semester	
Block Teaching Terms	
Membership of Global Teaching and Research Networks	

Other (please specify)	
CURRICULUM DELIVERY	
Problem-Based Learning (PBL), Inquiry-Based Learning (IBL); Research-Based Learning (RBL)	
Outcome-Based Education (OBE)	
Work-Based/Employment-Based Learning	
Internship Programme	
Compulsory Study Abroad/Erasmus	
Student-Led Projects	
Interdisciplinary Teaching/Courses	
Competency Degrees	
Other (Please Specify)	
TECHNOLOGY ENRICHED LEARNING ENVIRONMENT	
Tablet or Mobile Device in Classroom and for Study	
Online Learning Support	
Social Media Learning Support	
Online Courses, Including MOOCs	
Open Access Resources/Materials	
Flipped Classroom/ Lecture Capture	
Changes to the Learning Space/Classroom	
Other (Please Specify)	

1.3 Name the MOST SUCCESSFUL innovation or change introduced at your HEI. What factors contributed to its success?

1.4 Name the LEAST SUCCESSFUL innovation or change introduced at your HEI. What factors contributed its lack of success?

- **Factors Linked with Innovation in Educational Provision**

This section asks some questions about the factors driving or hindering change and innovations in educational provision at your HEI.

2.1 To what extent are the factors below driving innovation in educational provision at your HEI?

Statement	Instruction
Changes to the HE system, e.g. number, type and mission of institutions	4-point scale: 1 = Not at all a driving force for innovations at my HEI 4 = The strongest driving force for innovation at my HEI
Requirement for greater response to societal/economic needs and regional accessibility	
Refinement of funding formula based more on attainment of results and outputs	
Emphasis on efficiency and better use of resources	
Increasing accountability accompanied by greater institutional and operational autonomy	
Achievement of economies of scale and creating capacity or critical mass	
Strengthening national Quality Assurance system to help boost country's international reputation	
Enhance and improve learning outcomes, including graduation rates	
Progressive internationalisation via the expansion of exchange and foreign students and researchers	
Widening access and increasing participation to include new and mature learners, up-skilling and re-skilling opportunities	
Growth in alternative education provision, such as for-profit, on-line, international providers	
Other (please specify)	
Don't know	

2.2 Who is most responsible for leading innovation in educational provision at your HEI?

Statement	Instruction
University governance body	4-point scale: 1 = Not at all responsible for leading innovations in education provision 4 = The most responsible for leading innovations in education provision
Rector and senior leadership team	
University teaching staff	
Students of the university	
University administrative staff	
University library staff	
National government/ministries	
Regional/local external administrative body	
Business leaders	
General Public	
Media	
Others (please specify)	
Don't know	

2.3 To what extent were these factors used for the facilitation and support of innovation in educational provision at your HEI?

Statement	Instruction
Government Financial support	4-point scale: 1 = Not at all used 4 = Used always
Institutional Financial Support	
Administrative support	
Managerial support	
Academic staff support	
Changes in the organisational structure	
Changes in management structure	
Changes in governance structure	
New technology	
New process and procedures	
Student support	
External consultancy	
Office dedicated to strategic/project management	
Office dedicated to institutional research (collecting institutional data and/or measure performance)	
Specialized training/development in change	

management	
Changes in recruitment and/or appraisal of staff	
Other (fill in)	
Don’t Know	

2.4 Which of these factors have INHIBITED the introduction of innovations in educational provision at your HEI?

Statement	Instruction
Insufficient financial resources	4-point scale: 1 = Not at all affected 4 = The most affected
Insufficient skilled personnel	
Insufficient vision for innovativeness	
Wrong type of internal communication in HEI	
HRM functions did not adequately support the change required	
Lack of leadership to support/understand change required	
Insufficient forward planning	
Absence/insufficient control mechanisms	
Academic staff resistance to change	
Administration staff resistance to change	
Student resistance to change	
Atmosphere in workplace, interpersonal relations, behaviour of certain groups	
Inadequate organisational structure	
Other (fill in)	
Don’t know	

- **Consequences of Innovation**

This section asks how innovations in educational provision affected the governance model, organisational structure, and working conditions at your HEI?

3.1 Have the innovations in educational provision led to any changes at your HEI?

Yes/No

If No, go to the Section 4.

3.2 What are the consequences of innovation in education provision in regard to the governance structure at your HEI?

Consequences of innovation in education provision in regard to governance structure	Instruction
Introduce a new mission statement	Yes/No responses
Stronger managerial controls	
Redefined role of Rector/President	
Change method of appointment/election of Rector/President	
Strengthen role of senior management team	
Decentralization – transfer greater responsibility for decisions and budgets to faculty or school	
Accountability – increase accountability by faculty or school about decisions and budgets	
Introduce new financial or resource allocation model based on faculty/school performance	
Greater emphasis on QA guidelines (addressing effectiveness, transparency and responsibility)	
Change of the organizational structure in the overall HEI governance model	
Others (fill in)	
No change made to the governance structure at my HEI	
Don't know	

3.3 Have the innovations in educational provision (teaching & learning) led to any changes in the overall organisational structure of your HEI?

Consequences of innovation in education provision in regard to the organizational	Instruction

structure at your HEI	
Merge with another institution in your region/country	Yes/No responses
Downsize/reduce the overall size of the HEI (e.g. number of fields or students)	
Reduce the number of faculty/schools (e.g. merge or abolish faculty/schools)	
Become more specialist (e.g. focus on a smaller number of disciplines)	
Establish or make changes to administrative departments	
Establish or make changes to university library department	
Establish new faculties, departments, or other educational units	
Establish new research units/Research Institutes	
Establish partnership with another institution	
Introduce new positions in teaching staff	
Introduce new positions in administration	
Share facilities or resources with other institutions	
Other (please indicate)	
No change made to the organisational structure at my HEI	
Don't know	

3.4 Have the innovations in educational provision led to any changes to the working conditions or expectations of academic staff at your HEI?

Consequences of innovation in education provision in regard to the academic staff at your HEI	Instruction
New performance and/or compensation criteria for the academic staff	Yes/No responses
Training/development for the academic staff to become more competent	
Investments in the technology to support academic staff	
Greater focus on ethical conduct of academic staff	
Greater focus on gender equity within the academic staff	
Greater emphasis on sharing information and knowledge between academic staff	
Increase demands on the academic staff	
Increased flexibility of the academic staff	
Encouraged greater engagement and motivation	
Strengthen importance of co-operation more between academic staff and the academic library and librarians	
Other (please indicate)	
No change made in relation to staff at my HEI	

Don't know	

- **Future Challenges**

4.1 Perceptions of change and innovation in higher education

	Strongly Agree	Agree	Disagree	Strongly Disagree
European HE is one of the most innovative **in the world**				
My HEI is one of the most innovative **in Europe**				
Technology is critical to ensuring innovation in teaching and learning in the future				
Academic staff are the leaders of change/innovation in my HEI				
Students are the leaders of change/innovation in my HEI				
My HEI requires very significant change over the next 5 years				
The pace of change affecting my HEI is too slow				
Higher education is likely to be very different in 10 years				
MOOCs are worth the hype – they make HE better				
Blended learning is likely to be most beneficial to students				
Curriculum should be altered to ensure students have more experience of practical knowledge, such as student-led projects and problem-based learning in my HEI				
Academic staff do not receive sufficient support to rethink their courses and/or teaching methods				
Theory-intensive programmes are particularly effective for developing thinking skills, and practice-intensive programmes are more effective for developing creativity, teamwork and leadership skills.				
On-learning is being introduced as a low-cost				

model				
In the future, qualifications should be based on competency not years of study/European Credit Transfer System (ECTS).				

4.2 Please provide examples of your HEI's plans to foster innovation in education provision over next six years. Be specific about some particular strategies and goals.

4.3 Please indicate what changes, if any, you would like to introduce in the Governance structure, Organisational structure, and/or Working conditions (including the HRM-related issues) to support innovation in education provision at your HEI. Be specific about the particular strategies and goals for promotion of an innovative organisational culture at your HEI.

4.4 Would you like to make any other comments on the governance of innovation at your HEI, or in your country?

➢ Institutional Profile

Name of institution: …	Fill in

Country: …	Drop-down box

Date of establishment:	Tick the most appropriate response
• 1970–2014	
• 1945–1969	
• 1900–1945	
• 1850–1899	
• Pre-1845	

Description of type of institution:	Tick the most appropriate response
• Public	
• Private	

	Tick the most appropriate response
• Teaching-focused	
• Research-focused	
• Research only	
• Specialist (e.g. business, law, fine arts)	

Range of degrees offered:	Percentage of annual graduates
• Bachelors	
• Masters	Drop down box adding to 100%
• PhD	
• Other	

How is your HEI funded?	
• Ministry/State budget	
• Tuition fees and education contracts (including domestic and international students)	Percentage
• Research grants and contracts	
• Endowment and investment income	
• Other income (including income from intellectual property right)	Drop down box with adding to 100%

Contact email for person completing questionnaire **Please note: This information is only for background information; anonymity will be respected.**	Fill in
• Indicate your current job role	Drop down boxes: • Rector • Vice-Rector • member of the management board • head of faculty • academic/teaching staff, • other staff • other, please indicate: .....

- **Thank you**

Thank you for participating in this survey. Your responses will make an important contribution to our understanding of the governance of innovation in higher education.

Would you be willing to be contacted for further information?

YES

NO

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