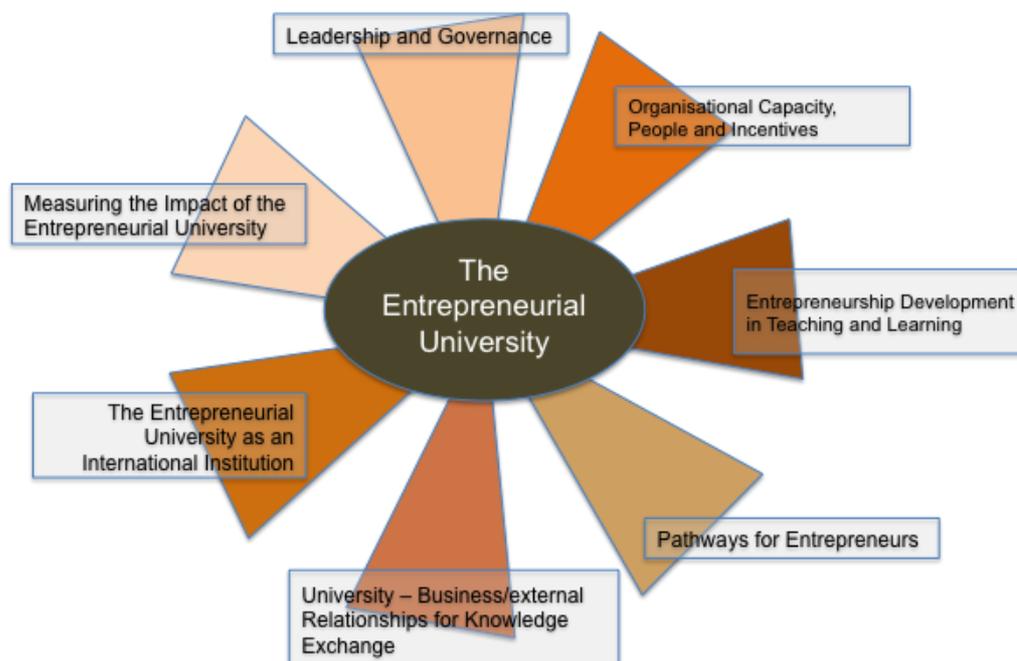


# A Guiding Framework for Entrepreneurial Universities



Final version 18<sup>th</sup> December 2012



## What is a Guiding Framework for Entrepreneurial Universities?

This Guiding Framework is aimed at those European universities<sup>1</sup> looking for advice, ideas and inspiration for the effective management of institutional and cultural change. It is designed to help interested universities assess themselves against statements which are organised under the following seven areas:

- Leadership and Governance
- Organisational Capacity, People and Incentives
- Entrepreneurship development in teaching and learning
- Pathways for entrepreneurs
- University – business/external relationships for knowledge exchange
- The Entrepreneurial University as an internationalised institution
- Measuring the impact of the Entrepreneurial University

These statements are factors likely to be characteristic of the Entrepreneurial University. As a self-assessment tool, the framework has the simple purpose of helping universities identify their current situation and potential areas of action, taking into account their local and national environments. This is *not* a benchmarking tool; it is for individual universities to determine their own strengths, weaknesses and find ways forward.

For each of the given statements, a university can assess itself on a scale of 0-10 and then use the Guiding Framework and accompanying material as a way of working on areas where improvement is considered a priority.

This framework was produced under the aegis of the European Commission's DG Education and Culture, in collaboration with the OECD LEED forum, and supported by a panel of six independent experts in this field.

## Why do we need a Guiding Framework for Entrepreneurial Universities?

Higher education is facing unprecedented challenges in the definition of its purpose, role, organisation and scope in society and the economy. The information and communication technology revolution, the emergence of the knowledge economy, the turbulence of the economy and consequent funding conditions have all thrown new light and new demands on higher education systems across the world. One significant European response is seen in the development, in concept and in practice, of the 'Entrepreneurial University' epitomised by innovation throughout its research, knowledge exchange, teaching and learning, governance and external relations.

The Guiding Framework began as an idea first discussed at the March 2011 University Business Forum; a European Forum which brings together universities and businesses to look at mechanisms for cooperation and encourage the transfer and sharing of knowledge. A group of participants at the event formulated a recommendation to take a closer look at the underlying concepts and characteristics of an Entrepreneurial University and to come up with a Guiding Framework that would be available to universities as a concrete tool for learning and inspiration.

The study does not attempt to invent new models and factors but brings together existing, available literature and models, and adapts them for best use in the European Higher Education Area.

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<sup>1</sup> To avoid confusion in this Guiding Framework University is used to mean all types of institutions of higher (third level) education, while students refers to all types and levels of students from Bachelor to PhD.

## **What is an Entrepreneurial University?**

What does it mean to be an Entrepreneurial University? What are the defining characteristics? Are there already Entrepreneurial Universities from which lessons can be learnt?

To find a single definition of the Entrepreneurial University which works across the European Higher Education Area is difficult and controversial. There is no one-size-fits-all definition of the Entrepreneurial University, but rather that there is an invaluable plurality of approaches, inventive, creative and yet practical, which distinguish the entrepreneurial style.

There are several attempts to define the Entrepreneurial University in the literature<sup>2</sup> and they also reach no consensus. As a consequence this framework has been designed around seven areas which cover many of the commonly identified features of an entrepreneurial university. Therefore this Guiding Framework can be used as a model which supports many of the existing definitions.

## **What happens to the results?**

The results derived from the use of the Guiding Framework belong to the university and are for your own personal/institutional use. The online version will ask users to register but the results will only be available to the registered user. The user can access and use the online Guiding Framework as many times as they want, either to provide a baseline against which future developments can be measured, or to allow several people to enter data for comparative purposes.

The online version can be accessed at the following address:  
[entrepreneurialuniversities.eu](http://entrepreneurialuniversities.eu)

## **Can I give feedback on the Guiding Framework for Entrepreneurial Universities?**

The nature of an Entrepreneurial University means this tool cannot be comprehensive but is there to provide guidance and inspiration. Therefore, this Guiding Framework remains a work in progress and feedback is welcomed<sup>3</sup>. The online version of the Guiding Framework has a feedback section which can be filled in and the responses will be sent back to the European Commission and the OECD.

## **Who can use the Guiding Framework?**

The main target audiences are those university staff concerned with strategic planning and decision-making. The framework can be used, as a formal or an informal exercise, by individuals, or at the faculty or the institutional level. Universities may also want to bring together staff in working groups to look at the issues, come to consensus on their position and agreement on areas for improvement.

Results should offer some insight into the progress of change in a university, forming the basis of planning discussions, and useful in the formulation of strategic plans. Results might also provide a baseline, against which future developments can be measured.

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<sup>2</sup> Further guidance and definitions can be found in the documents indicated in the Bibliography.

<sup>3</sup> The first version of the Guiding Framework has been devised in cooperation with experts in the field and piloted with a small number of universities covering 17 Member States.

## **Supporting material**

This Guiding Framework also contains a number of references to useful case material taken from the literature and other sources, which can be used as inspiration.

They are organised by the areas of the guiding framework but many of them fit more than one category. Many are very broad and others relate to very specific initiatives. References and contacts are also provided.

# 1 Leadership and Governance



This section of the Guiding Framework explores those factors which relate to the leadership and governance of a university. In order to develop an entrepreneurial culture in an institution, strong leadership and good governance are crucial. Many universities include the words "enterprise" and "entrepreneurship" in their mission statements but this needs to be more than a reference. This section highlights some of the important factors a university may consider in order to strengthen their entrepreneurial agenda.

**1. Entrepreneurship is a major part of the university strategy.**

Universities should see themselves as entrepreneurial organisations and environments held together by common values/missions and not detailed control systems. To develop as an entrepreneurial organisation with an entrepreneurial culture the entrepreneurial activities should be established in the strategy.

To score highly a university should have a working mission statement with an entrepreneurial vision for the future of the institution. In addition, the strategy could have specific objectives for entrepreneurship with associated performance indicators (e.g. generating entrepreneurial motivation, cognition, and attitudes; generating entrepreneurial competences and skills; support business start-ups; commercialise research results through technology transfers and business start-ups; generate revenues for the institution from spin-off activities; strengthen co-operation between the institution and local firms).

**2. There is commitment at a high level to implementing the entrepreneurial strategy.**

There has to be commitment to implementing the strategy in relation to the entrepreneurial agenda. To score highly, the strategy should be known across the institution and understood as a priority by staff and students. The commitment should be shared and supported by internal communication efforts. Another key indicator of commitment is if someone at the level of the Dean or Rector is made responsible for the entrepreneurial agenda. Universities with strong commitment at a high level will revisit and revise strategies to keep them up to date. Universities may also have adapted their structures to better deliver the entrepreneurial strategy.

**3. The university has a model for coordinating and integrating entrepreneurial activities at all levels across the university.**

There are many different models for coordinating and integrating entrepreneurial activities across a university. Whichever model is employed, it will take advantage of existing relationships, coordinate across departments, faculties and other centres, and avoid the duplication of work within a university and its local entrepreneurship ecosystem. To score highly, universities should have an entrepreneurship structure in place which co-ordinates activities within the institution and with other stakeholders within the local entrepreneurship ecosystem.

**5. The faculties and units have autonomy to act.**



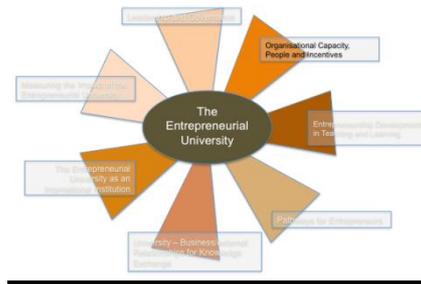
Overcoming bureaucratic barriers is key to entrepreneurship. Universities with fewer barriers or hierarchies find it easier to undertake entrepreneurial activities and speed up idea creation and decision making. New centres and structures for the development of new activities can be formed easily. The institution should maximise autonomy and individual ownership of initiatives.

**6. The university is a driving force for entrepreneurship development in the wider regional, social and community environment.**



Universities play several roles in their communities and one of their key functions is to support and drive regional, social and community development. To score highly, universities should be active players, linked to their external environment by having a strong presence in the community. This might include for example, providing facilities to others from outside the institution, participating in regional clusters, supporting local cultural and artistic activities, providing opportunities for regional start-ups or established companies and taking an active role in determining the strategic direction of local development.

## 2. Organisational Capacity, People and Incentives



Universities can be constrained by their own organisational structures and approaches, making it more difficult to carry out the types of entrepreneurial activities which support their strategic objectives. This section highlights some of the key areas a university may look at if it wishes to minimise the organisational constraints to fulfilling its entrepreneurial agenda. This includes the financial strategy, attracting and retaining the right people and incentivising entrepreneurial behaviour in individuals.

### **1. The university's entrepreneurial objectives are supported by a wide variety of funding sources/investment, including investment by external stakeholders.**



It is crucial for the university to invest in its entrepreneurial activities through a sustainable financial strategy, but it is not good to be over reliant on limited sources of public funding. Universities are entrepreneurial when they are not afraid to maximise their potential, diversify funding sources and reduce their dependency on state/public funding. Universities could score highly if they bring in additional external funding from or through services in kind such as sharing space and facilities. They may use revenue generated from entrepreneurship activities to reinvest (self-funding activities).

### **2. The university has a sustainable financial strategy in place to support entrepreneurial development.**



Entrepreneurial activities in universities will be viewed as more legitimate and have a better chance of making an impact if they are sustainable in the long-term. This involves financing or adequate support of entrepreneurial activities as part of the university's budget (long-term). To score highly, universities should invest in their entrepreneurial activities through their financial strategy.

### **3. There are mechanisms in place for breaking down traditional boundaries and fostering new relationships - bringing internal stakeholders together (staff and students) and building synergies between them.**



All staff and students are important internal stakeholders supporting the entrepreneurial agenda. All parts of the university have to work together, creating synergies and linkages across faculties, departments and other structures, breaking down traditional boundaries and silos. To score highly universities should have mechanisms in place for exploiting internal knowledge and resources through, for example, shared facilities across faculties, student-staff structures, interdisciplinary structures, cross faculty teaching and research groups.

**4. The university is open to recruiting and engaging with individuals who have entrepreneurial attitudes, behaviours and experience.**



Universities can build and foster an entrepreneurial culture by recruiting staff that have a strong entrepreneurship background. To score highly, the institution should use entrepreneurial attitudes and experience as criteria in the recruitment process. This is not just about academic staff. People from outside academia, such as guest lecturers or alumni, can also bring important skills to academic institutions; they bring an external viewpoint as well as skills and abilities which are not available internally.

**5. The university invests in staff development to support its entrepreneurial agenda.**



Staff are a key resource in strategy delivery, entrepreneurship education, support for business start-ups and all entrepreneurial activities the university wants to develop. Many areas of the entrepreneurial agenda are fast moving, with associated need for upskilling and knowledge acquisition. To score highly, universities should have a formal policy for career development for all staff, which addresses the entrepreneurial agenda and is tailor made for their own key goals.

**6. There are clear incentives and rewards for staff who actively support the university's entrepreneurial agenda.**



Building an entrepreneurial culture within the staff body is essential for universities to increase and improve the quality of entrepreneurial activities. Encouraging and rewarding entrepreneurial behaviour in all staff reinforces the commitment to developing as an Entrepreneurial University. To score highly, universities should have incentive and reward systems for those staff members that actively support entrepreneurship and business creation activities. These systems should be available at an individual level as well as for faculties/departments. Examples include; development sabbaticals, rewards beyond research, publication and teaching criteria, professors working part time in their own companies, office and laboratory space for pursuing entrepreneurial activities, reduced teaching loads etc. In many countries, staff includes PhD students.

**7. The university gives status and recognition to other stakeholders who contribute to the university's entrepreneurial agenda.**



External stakeholders should be valued by a university as they bring additional skills, knowledge and opportunities for development. Their value could be recognised through the following types of activities and opportunities: offering use of facilities and services, mechanisms for shared risk and reward for engagement, opportunities for fellowships, associateships, industrial professors or as guest teachers.

### 3. Entrepreneurship development in teaching and learning



Universities are expanding their entrepreneurship and entrepreneurial education offer to the institution as a whole, including all staff and students. This section of the framework highlights a number of areas in which entrepreneurial development can take place, reflecting the need for the organisational structure to support entrepreneurial development as well as provide the right tools to deliver education and training opportunities both internally and via the external environment.

**1. The university is structured in such a way that it stimulates and supports the development of entrepreneurial mindsets and skills.**

The university has specific structures in place which facilitate entrepreneurial development across all activities. Structures are crucial for universities who wish to not only deliver entrepreneurial learning, but also want to be entrepreneurial in their approach. To score highly, universities should have posts such as; Professor of Entrepreneurship or senior staff who are at least responsible for entrepreneurship at the unit/faculty level. These individuals should be involved in strategy and future planning for the university. As well as staff responsibilities, forward thinking universities also have student ambassadors and mechanisms in place for feedback and adjustment of strategy and courses. The staff and student structures may also be supported by investment funds and other internal exchange platforms.

**2. Staff take an entrepreneurial approach to teaching in all departments, promoting diversity and innovation in teaching and learning.**

There are many approaches to delivering entrepreneurial learning which can be adopted throughout a university. In universities committed to entrepreneurial learning, skills are not just delivered through traditional lectures; many other approaches are taken to produce the desired learning outcomes. Having a range is important, as different subjects/topics can be best served by different approaches. Students also respond differently to different methods. The key is to enhance the student’s ability to think and respond entrepreneurially. There are numerous examples including the use of mentors, living labs, cross disciplinary learning etc, in addition, students may also start up and run their own companies, have competitions and awards, be ambassadors for entrepreneurship and run clubs.

To score highly, universities should be delivering their entrepreneurial teaching through a range of methods across all departments. Staff also need access to support and training for capacity building.

**3. Entrepreneurial behaviour is supported throughout the university experience; from creating awareness and stimulating ideas through to development and implementation.**



Entrepreneurial behaviour is encouraged and supported throughout teaching and in extra-curricular activities. It is also important to deliver entrepreneurship education with “real” entrepreneurs whenever possible and use a variety of teaching methods including; case studies, games and simulation, real experience reports by start-ups and studies of business failure. To score highly, the university should offer formal and informal teaching and learning opportunities to support the entrepreneurial journey.

**4. The university validates entrepreneurship learning outcomes.**



Universities that value entrepreneurial learning commit to regular review, validation and updating of entrepreneurial course content. To score highly, there should be mechanisms in place by which teaching staff have codified the expected learning outcomes in relation to entrepreneurship (knowledge, skills and competence) in all degree programmes. The learning outcomes should be validated at the institutional level through appropriate mechanisms (internal or external moderation for example) and given due recognition in courses. Students should have a clear understanding of the learning outcomes achieved.

**5. Collaborating and engaging with external stakeholders is a key component of teaching and learning development in an Entrepreneurial University**



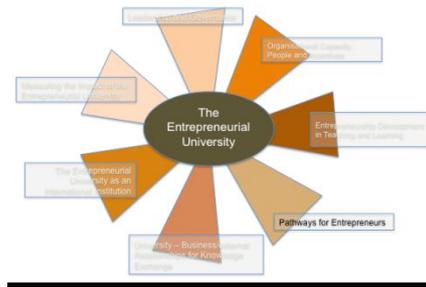
An important but often under-exploited resource for the Entrepreneurial University is the collaboration with the external environment and its stakeholders. This includes partnerships with communities, local organisations, local government chambers of commerce and alumni. Collaborating with external stakeholders can provide new relationships and be an important source of expertise and experience that can be used in entrepreneurship education and support services. To score highly, universities should collaborate and maintain regular contact with external stakeholders, have up to date information on their location and activities, and have activities that integrate their experience and expertise into entrepreneurship education and start-up support services.

**6. Research results are integrated into entrepreneurship education and training.**



To stay up-to-date and relevant, the entrepreneurship education offer needs to be continuously reviewed and updated. One important aspect of this is to integrate the results of current entrepreneurship research into teaching. To score highly, universities should encourage staff and educators to keep the curriculum up-to-date with recent research findings and encourage the internal exchange of knowledge.

## 4. Pathways for entrepreneurs



The decision to commit to entrepreneurship is not a single act but a process. For universities to be entrepreneurial they need to support the pathways taken by would-be entrepreneurs (staff and students) from ideas to market growth or into employment. This is not just a process internal to the university but one where a pluralistic approach is necessary providing access to internal and external opportunities and expertise.

This section of the framework gives statements for universities who wish to support "intrapreneurs" in their career development or enterprising individuals on their pathway to becoming an entrepreneur.

### 1. The university raises awareness of the value/importance of developing entrepreneurial abilities amongst staff and students.



Developing entrepreneurs is often focused on the provision of opportunities and facilities rather than the inspiration and motivation that is necessary for individuals to move from ideas to action. Creating widespread awareness amongst staff and students of the importance of developing a range of entrepreneurial abilities and skills is therefore an important function of an Entrepreneurial University. This is not just about the abilities which support new business ideas but also those which can support employability and career development. It is about creating value in many different areas of society. To score highly the university should embed awareness-raising across all faculties and staff in all areas of the university.

### 2. The university actively encourages individuals to become entrepreneurial.



To encourage entrepreneurial behaviour, universities must first highlight the benefits of developing capabilities and seeking out opportunities then follow this up by encouraging the uptake of opportunities. To score highly, universities should encourage staff and students to develop entrepreneurial mindsets, behaviour and skills through a range of mechanisms which can be tailored to the individual.

### 3. The university provides opportunities to experience entrepreneurship.



Once staff and students understand the benefits of developing an entrepreneurial mindset and of becoming entrepreneurial, the university should provide opportunities to experience entrepreneurship. This involves exposing staff and students to environments in which they are more likely to encounter challenges which can encourage the development of entrepreneurial skills. This may include staff training, entrepreneurs in residence who teach and engage with staff and students, access to real life problems, as well as awards and other means of recognition. Education activities should be integrated with enterprise-related activities to ensure entrepreneurs are adequately prepared for creating start-ups through their education and that they have the support to put what they have learned into practice.

**4. The university provides support for individuals and groups to move from entrepreneurial ideas to action.**



Having an idea is only one step on the road to becoming an entrepreneur. In order to convert an idea into action the university should provide individuals and groups with a range of support services and opportunities. To score highly, a university should provide support from the pre start-up phase through to the growth phase of business development including, for example, network development and mentoring. In addition universities should link their start-ups and companies with the wider entrepreneurial ecosystem.

**5. Mentoring by academic and industry personnel is available.**



Mentoring is an effective learning and business support tool that can be used to reinforce the entrepreneurial skills that students have acquired. Matching student and graduate entrepreneurs with experienced entrepreneurs will increase the business's chances of success as well as that of other support services. To score highly, universities should make mentoring services available to both student and graduate entrepreneurs. Mentors could be educators with entrepreneurship experience or dedicated business coaches. Entrepreneurial Universities also make use of their alumni as mentors.

**6. The university facilitates access to private financing for its potential entrepreneurs.**



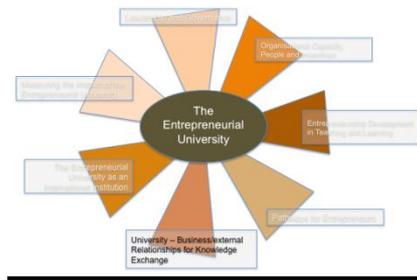
Facilitating access to private finance, for both student and graduate entrepreneurs, is essential to help universities build links with industry and to develop an entrepreneurial ecosystem. To score highly, universities should organise networking events for nascent entrepreneurs where they can meet investors as well as dedicated financing events that provide budding entrepreneurs with the opportunity to pitch their ideas to investors. Moreover, the institution should support staff, student and graduate entrepreneurs by helping them find private financing opportunities on an ad hoc basis.

**7. The university provides access to business incubation facilities.**



Business incubation is an important tool that can be used by universities to support new start-ups and spin-offs, as well as building links to industry. Incubators often provide free or subsidised premises, access to laboratories, research facilities and IT services, coaching, mentoring, training and access to financing. To score highly, universities should have incubators on-site that provide these services, or provide assistance to staff, students and graduate entrepreneurs in accessing external facilities that provide this type of support.

## 5. University – business/external relationships for knowledge exchange



Active involvement of a range of stakeholders has been shown to be a contributing factor in successful Entrepreneurial Universities. Building and sustaining relationships with key partners and collaborators is essential in achieving the full potential of a university, in entrepreneurship in research, teaching and in other third mission activities. There are several components to the external environment including relationships with the public sector, regions, businesses, alumni, professional bodies etc. The motivation for this commitment is to create value for the university and society.

### **1. The university is committed to collaboration and knowledge exchange with industry, society and the public sector.**



Universities should place a high value on knowledge exchange through collaboration and partnership. To score highly knowledge exchange should be part of the institutional policy. The policy should give guidance on how all types of relationships with industry, the public and private sector etc, can be formed and managed. This will include support mechanisms for coordinating these relationships.

### **2. The university demonstrates active involvement in partnerships and relationships with a wide range of stakeholders.**



Entrepreneurial universities understand the value of multiple stakeholder engagement to support entrepreneurship. To score highly a university should be involved in a range of partnerships covering, for example, regional and local organisations, SMEs, social enterprises, schools, alumni and entrepreneurs.

### **3. The university has strong links with incubators, science parks and other external initiatives, creating opportunities for dynamic knowledge exchange.**



Universities can generate added value from their relationships with their external environment. Many knowledge intensive structures may surround universities such as incubators and science parks and the university should have mechanisms in place to capitalise on knowledge acquired. To score highly universities should have a system in place that allows the cross-fertilisation of knowledge and ideas from science and business parks by, for example, providing open spaces for collaboration, lectures, and organising joint workshops, breakfast meetings, and other networking events and opportunities. There should be a flow of people and knowledge in both directions. Universities may also have a direct financial or management interest in the science parks and incubators, ranging from participation to ownership.

### **4. The university provides opportunities for staff and students to take part in entrepreneurial**

**activities with business/the external environment.**



Staff and students should have the opportunity to engage more extensively with the external environment across a range of entrepreneurial activities. To score highly the university should support knowledge exchange mechanisms and collaboration with the external environment. This can take place by formal means such as part of an active curriculum (learning factories) and internships, or informally through breakfast clubs and other social gatherings and activities.

**5. The university specifically supports staff and student mobility between academia and the external environment.**



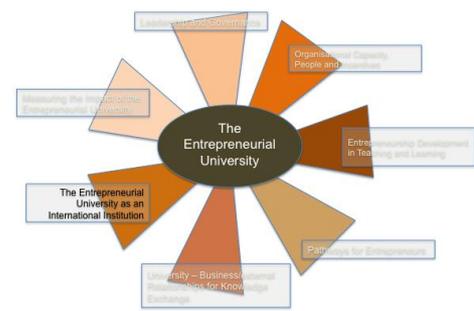
A particularly important mechanism for knowledge exchange is staff and student mobility. This includes internships and programmes for teaching and research exchange. To score highly universities need to have mechanisms in place to support mobility of staff and students, with the external environment. There are a number of different types of approaches taken, some more formal than others.

**6. The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem.**



The knowledge created and co-created by research, industry, education, entrepreneurs and the wider community needs to be absorbed back into the university's environment. There need to be mechanisms in place by which the university can absorb information and experience from the wider ecosystem. For teaching this may be in the form of internships, nominated business chair positions/ guest lecturers or teaching opportunities. In the case of research this may be in the form of collaborative partnerships, contract work, new knowledge from the teaching agenda etc. Equally, the institution should have clear mechanisms for exploiting entrepreneurial opportunities with commercial and industrial partners.

## 6. The Entrepreneurial University as an internationalised institution



An international perspective at all levels has been identified as one of the characteristics of an Entrepreneurial University. As internationalisation is increasingly integrated into strategic processes, it becomes essential for universities to be able to make informed decisions on institutional direction, as well as assess and enhance performance according to different objectives over a wide range of international activities. It is not possible for a university to be entrepreneurial without being international but the university can be international without being entrepreneurial.

This section of the Guiding Framework provides a number of statements which reflect the influence of the international environment on the entrepreneurial aspects of teaching, research, talent development, new opportunities and culture.

### **1. Internationalisation is a key part of the university's entrepreneurial strategy.**



Internationalisation is the process of integrating an international, intercultural or global dimension into the purposes, functions or delivery of education<sup>4</sup>. Most universities have internationalisation strategies. To score highly a university should ensure that the commitments set out in the internationalisation strategy reflect the entrepreneurial objectives of the university.

### **2. The university explicitly supports the international mobility of its staff and students (including PhD students).**



As well as attracting staff and students, Entrepreneurial Universities also actively encourage and support the mobility of their own staff and students. To score highly, the institution should support international mobility through exchange schemes, scholarships, overseas internships and the use of other broader mobility programmes. Incentives and rewards should also be in place for international mobility.

### **3. The university seeks and attracts international and entrepreneurial staff (including teaching, research and PhDs)**



Universities should explicitly set out to attract international and entrepreneurial staff. Universities may have specific international recruitment drives in place, and dedicated PhD programmes/resources which are organised by a central office. Recruitment should be focused to ensure it matches the needs of the institution.

<sup>(4)</sup> Reference to Knight 2003)

**4. The university demonstrates internationalisation in its approach to teaching.**



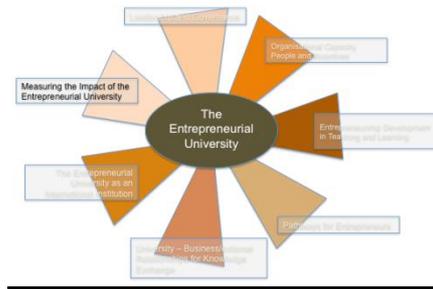
Access to new ideas for teaching and learning in the international environment can increase universities ability to compete on the international market. To score highly in this category, universities should have a teaching and learning environment tailored to a more global audience. This should include classroom based activities with a universal dimension, studying abroad, international exchanges and internships.

**5. The university, its departments and faculties actively participate in international networks.**



Strategic international partnerships are an important component of an entrepreneurial institution. These are not just about paper agreements but should be fully functioning partnerships across teaching and research areas (and for staff and students). To score highly universities should have links with other international networks, university innovation clusters and bilateral partnerships with other institutions. There may also be support structures in place to manage these relationship networks. This may results in a growing numbers of joint/double degrees and partnerships. Universities should use their networks, partnerships and international alumni to feed back into the teaching, learning and research agendas.

## 7. Measuring the impact of the Entrepreneurial University



Underlying the drive to create a more entrepreneurial university is the need to understand the impact of the changes which are made. There are many different types of impact a university may seek ranging from the local to the global. The impacts affect internal stakeholders (students/graduates, staff) and also external stakeholders (local businesses, organisations and whole communities).

Impact measurement in universities is underdeveloped. The majority of the measurements found in the literature relate to spin-offs, IP and research outcomes rather than graduate entrepreneurship, retaining talent, local economic development or the impacts of the broader entrepreneurial strategy. Therefore this section identifies the areas where a university might want to measure rather than **what** to measure.

### **1. The university assesses the impact of its entrepreneurial strategy and the strategy is responsive to change.**



Having a strategy that feeds into the operational activities of the university is important. Understanding the impact of the activities and feeding this information back into strategy formulation is even more important. To score highly a university should be able to demonstrate that it collects evidence of the effect of activities on its entrepreneurial agenda; that the evidence is actively used as a tool for reflection and review of the strategy and mission of the university.

### **2. The university assesses the level of engagement in entrepreneurial teaching and learning across the institution.**



If assessment takes place it tends to be in relation to well defined courses being offered by, for example, the business school. To score highly a university should assess the level of engagement with entrepreneurial teaching and learning across all faculties and departments and compare and contrast the findings and ensure that the results are fed back into course renewal and staff development plans.

### **3. The university regularly assesses the impact of entrepreneurship teaching and learning.**



To ensure that entrepreneurship activities are reaching their full potential, they should be regularly monitored and evaluated. However, it is not enough to count participants and measure their level of satisfaction; monitoring and evaluation should measure changes in participants' motivation and the level of competence in the skills gained through the entrepreneurship education activities. To score highly, the university should measure the impact of entrepreneurship education at different phases of entrepreneurship education

activities (beginning, end, point in time after) to get an accurate picture of the impact that the entrepreneurship education has had.

**4. The university carries out regular monitoring and evaluation of the universities' knowledge exchange activities.**



To ensure that knowledge exchange is reaching its full potential, the associated mechanisms and activities should be regularly monitored and evaluated both from the internal and external perspective. To score highly, universities need to have defined success criteria in relation to knowledge exchange. For internal measurements this may include the number of start-ups and spins offs, patents, new research ideas and new relationships. For external measurements it should include the perceived value and impact of the university on the wider stakeholder environment (business, government etc).

**5. The university carries out regular monitoring and evaluation of the impact of start-up support.**



It is important to monitor and evaluate start-up support activities closely to ensure that they are providing the type and quality of support that is needed and to ensure that these activities are delivered in the most effective manner. Monitoring and evaluation should be regular and follow strict procedures. To score highly, universities should measure not only the number of participants and their satisfaction with start-up support, but also the number of enterprises started and the role played by start-up support. Monitoring and evaluation should be done following completion of the support activity, as well as at a later date to measure the impact of the support services on the success of the business start-up.

## **FEEDBACK**

## CASE MATERIAL

The following case material is taken from the literature and from other sources for universities to use as inspiration for developing their own strategies and activities.

They are organised by the areas of the guiding framework but many of them fit more than one category. Many are very broad and others relate to very specific initiatives. References and contacts are also provided.

Leadership and Governance

Organisational Capacity, People and Incentives

Entrepreneurship development in teaching and learning

Pathways for entrepreneurs

University – business/external relationships for knowledge exchange

The Entrepreneurial University as an internationalised institution

Measuring the impact of the Entrepreneurial University

### Leadership and Governance

<p><b>Autonomy of professor in the conduct of their activities</b></p>	<p><b>Country</b></p> <p>Belgium</p> <p><b>Universities involved</b></p> <p>KU Leuven (<i>Katholieke Universiteit Leuven</i>)</p> <p><b>Other relevant parameters of the framework</b></p> <p>Organisational Capacity, People and Incentives</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business:  <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://www.kuleuven.be/english">http://www.kuleuven.be/english</a></p>
<p><b>Key parameter:</b></p> <p><i>The faculties and units have autonomy to act</i></p>	
<p>The structure of Katholieke Universiteit Leuven (KUL) is multi-layered and divided into different areas: Educational policy, Research policy, and several Faculties. The research management structure consists of the Research Policy Council, in charge of preparing the research policy; and the Research Council charged with advising and stimulating actions. The Research Council is also responsible for evaluating the proposals from KUL researchers who apply for funding from the University Research Fund.</p> <p>Each faculty has its own board and develops its own strategy. There is no formal hierarchical structure, with each professor free to design his or her own research agenda.</p>	

<b>Governance of the technology transfer process</b>	
<p><b>Key parameter:</b></p> <p><i>The university has a model for coordinating and integrating entrepreneurial activities at all levels</i></p>	<p><b>Country</b></p> <p>Belgium</p> <p><b>Universities involved</b></p> <p>KU Leuven (<i>Katholieke Universiteit Leuven</i>)</p> <p><b>Other relevant parameters of the framework</b></p> <p>Organisational capacity, people and incentives</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business:  <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://www.kuleuven.be/english">http://www.kuleuven.be/english</a></p>
<p>The Technology Transfer Office of K.U. Leuven – Leuven Research and Development (LRD) - was established in 1972. Over the years, it has progressively shifted towards a decentralised and diffuse approach to university business cooperation, embedded in all the University’s units and structures. It relies on interdisciplinary research divisions and on the progressive inclusion of technology transfer goals in researchers’ culture. Furthermore, LRD’s activities are not limited to the University, but widely implemented in coherence with the regional context. This shift has accompanied KUL development from a traditional towards an “entrepreneurial university” model that refers to the increasing tendency to run the university as a quasi-business.</p>	

<b>The Institutional Agenda at the Slovak University of Technology</b>	
<p><b>Key parameter:</b></p> <p><i>Entrepreneurship is a major part of the university strategy</i></p>	<p><b>Country</b></p> <p>Slovakia</p> <p><b>Universities involved</b></p> <p>Slovak University of Technology</p> <p><b>Other relevant parameters of the framework</b></p> <p>N/A</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business  <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p>
<p>Student employability, cooperation and the relevance of university’s courses to the economy are high on the Slovak University of Technology’s institutional agenda. The relevance of the university’s activities to the economy and to society is emphasised in all strategic documents.</p> <p>Cooperation is not limited to research related contracts. The university’s approach to university business cooperation is evident at all levels of the university (teaching, research, management, administration, etc.) and is geared up for benefit of students, researchers and industry.</p>	

<b>Stanford's Technology Venture Programme (STVP)</b>	
<p><b>Key parameter:</b></p> <p><i>The university has a model for coordinating and integrating entrepreneurial activities as all levels of the university</i></p>	<p><b>Country</b></p> <p>USA</p> <p><b>Universities involved</b></p> <p>Stanford University</p> <p><b>Other relevant parameters of the framework</b></p> <p>Organisational Capacity, People and incentives Pathways for entrepreneurs University/business external relationships for knowledge exchange</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://stvp.stanford.edu/">http://stvp.stanford.edu/</a></p>
<p>Located in the heart of Silicon Valley, the Stanford Technology Ventures Program (STVP) is the entrepreneurship centre at Stanford University's School of Engineering. Hosted by the department of Management Science and Engineering, STVP is dedicated to accelerating high-technology entrepreneurship education and creating scholarly research on technology-based firms that, in turn, provides new insights for students, scholars, and business leaders.</p> <p>STVP provides undergraduate and graduate students from all majors with the entrepreneurial skills needed to use innovations to solve major world problems, with an emphasis on the environment, human health, information technology, and other global issues. Research efforts tackle the challenges of creating successful ventures and innovative large firms, and then taking that knowledge to the classroom and publication</p> <p>STVP's global outreach program includes annual conferences on several continents and a website that includes thousands of video clips and podcasts regarding technology entrepreneurship and innovation (<a href="http://ecorner.stanford.edu/">http://ecorner.stanford.edu/</a>). It also cooperates with other institutions worldwide fthrough the Stanford Entrepreneurship Network (global community building).</p>	

## Organisational Capacity, People and Incentives

<b>UnLtd Higher Education Support Initiative</b>	<p><b>Country</b></p> <p>UK</p> <p><b>Universities involved</b></p> <p>56 HEIs</p> <p><b>Other relevant parameters of the framework</b></p> <p>Pathways for entrepreneurs</p> <p>University – business/external relationships for knowledge exchange</p> <p><b>References/sources of information</b></p> <p><a href="http://www.unltd.org.uk/hesupport">www.unltd.org.uk/hesupport</a>  <a href="mailto:hesupport@unltd.org.uk">hesupport@unltd.org.uk</a></p>
<p><b>Key parameter:</b></p> <p><i>The institution's entrepreneurial objectives are supported through a wide variety of funding sources/investment, including investment by external stakeholders</i></p>	
<p>The Higher Education Funding Council in the UK (HEFCE) in partnership with UNLtd have launched a £2m higher education initiative to encourage social entrepreneurship. The initiative selected 56 institutions across England to lead the programme and to encourage social entrepreneurialism throughout the structures. This was launched in January 2012 and is to run for 18 months. Over 2012 the chosen institutions recruited 'Champions' to engage a wide range of staff and students from all disciplines. In their applications for the funding, the universities proposed a wide range of outreach approaches, from cross-campus 'virtual hubs' established to raise awareness of social entrepreneurship and the support available, to inspirational master classes delivered by high profile social entrepreneurs. The initiative will see the institutions matched with a network of local business professionals who will provide pro bono support to staff and students looking to start up or grow their social venture. It will also provide opportunities for collaboration and knowledge sharing between the network of higher education institutions.</p>	
<b>Reorganisation in interdisciplinary schools based on grand challenges</b>	<p><b>Country</b></p> <p>USA</p> <p><b>Universities involved</b></p> <p>Arizona State University</p> <p><b>Other relevant parameters of the framework</b></p> <p>Leadership and governance</p> <p><b>References/sources of information</b></p> <p><a href="http://president.asu.edu/sites/default/files/Building%20an%20Entrepreneurial%20University%20(Germany)%20060808%20Kauffman-Planck%20Conference_0.pdf">http://president.asu.edu/sites/default/files/Building%20an%20Entrepreneurial%20University%20(Germany)%20060808%20Kauffman-Planck%20Conference_0.pdf</a></p> <p><a href="http://newamericanuniversity.asu.edu/">http://newamericanuniversity.asu.edu/</a></p>
<p><b>Key parameter:</b></p> <p><i>There are mechanisms in place for breaking down traditional boundaries and fostering new relationships - bringing internal stakeholders together (staff and students) and building synergies between them.</i></p>	
<p>Arizona State University calls itself a new American University, referring to its commitment to creating economic and social value and impact. For this purpose, it has recently redesigned the institution to address the grand societal challenges.</p> <p>This includes a major reorganisation in recent years, with a view to address the focus resulting in the formulation of a school centric model around its four main campuses. This has created a federation of interdisciplinary colleges and schools that together with departments, research institutes and centres provide a close knit but diverse academic establishment. Sixteen new interdisciplinary schools have been launched in the past few years, including the school of Global Studies, the school of Human Evolution and social change and the school of Earth and Space exploration.</p>	

The Kauffman Foundation	
<p><b>Key parameter:</b></p> <p><i>The institution's entrepreneurial objectives are supported through a wide variety of funding sources/investment, including investment by external stakeholders</i></p>	<p><b>Country</b></p> <p>USA</p> <p><b>Universities involved</b></p> <p>Cross-campus initiatives with impact on a large number of universities</p> <p><b>Other relevant parameters of the framework</b></p> <p>Entrepreneurship teaching and learning</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://www.kauffman.org/">http://www.kauffman.org/</a></p>
<p>The Kauffman Foundation is often referred to as the world's largest foundation devoted to entrepreneurship. It is working to further understand the phenomenon of entrepreneurship, to advance entrepreneurship education and training efforts, to promote entrepreneurship-friendly policies, and to better facilitate the commercialisation of new technologies by entrepreneurs and others, which have great promise for improving the economic welfare of our nation.</p> <p>Helping universities become more entrepreneurial—not only in what they teach and how they teach it, but in how they operate—is at the heart of the Kauffman Foundation's work in higher education. Cross-campus activities include the Kauffman Campuses initiative that seeks to transform the way colleges and universities make entrepreneurship education available across their campuses, enabling any student, regardless of field of study, to access entrepreneurial training.</p>	

## Entrepreneurship development in teaching and learning

<p><b>The Institute of Applied Entrepreneurship at Coventry University</b></p>	<p><b>Country</b></p>
<p><b>Key parameter:</b></p> <p><i>Human Resource Development for entrepreneurship education is in place</i></p>	<p>UK</p> <p><b>Universities involved</b></p>
<p>The Institute of Applied Entrepreneurship offers the Coventry University's Schools and Colleges assistance with developing enterprise curriculum enrichment materials and sustainable enterprise and entrepreneurship activities, with a view to generate more awareness and accessibility to enterprise education.</p> <p>Activities include: workshops, coaching and tailored Continuing Professional Development programmes for teaching staff.</p> <p>It also provides support to develop enterprise curriculum enrichment materials across a range of curriculum/subject areas, collaboration on enterprise/entrepreneurship projects and communication activities on entrepreneurship education at the university.</p>	<p>Coventry University</p> <p><b>Other relevant parameters of the framework</b></p> <p>Entrepreneurship teaching and learning</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://wwwm.coventry.ac.uk/">http://wwwm.coventry.ac.uk/</a></p>

<p><b>The Provost Fellow Programme at the University of Illinois at Urbana-Champaign</b></p>	<p><b>Country</b></p>
<p><b>Key parameter:</b></p> <p><i>Entrepreneurial behaviour is supported throughout the university experience; from creating awareness and stimulating ideas through to development and implementation (pre-business and business start-up).</i></p>	<p>USA</p> <p><b>Universities involved</b></p> <p>University of Illinois at Urbana-Champaign</p>
<p>The Provost Fellows Programme is designed to develop leadership skills at the campus level for some of our most accomplished tenured faculty. Fellows participate in a range of mentoring and learning opportunities, collaborate with colleagues in the Provost's and Chancellor's Offices and in other academic and administrative offices across campus, and assume leadership roles on critical campus strategic initiatives and projects.</p> <p>As part of the programme, Fellows become familiar with campus wide academic initiatives, strategic planning, budget issues, and challenges in higher education. Each fellow works with a primary mentor in the Provost's Office. Fellows have 50% FTE appointments in leadership roles in the Provost's Office, maintaining 50% appointments in their home units during this time. The typical term for the appointment is two years, although an extension is possible if warranted. Fellows are provided some funding to continue their involvement during the summer. Fellows also will be provided a modest discretionary travel and/or training budget. These resources can be used to fund activities on campus, to learn about organizational and leadership structures and processes at other institutions of higher education, to participate in formal training opportunities, and to attend relevant conferences in higher education.</p>	<p><b>Other relevant parameters of the framework</b></p> <p>N/A</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://www.provost.illinois.edu/fellows/index.html">http://www.provost.illinois.edu/fellows/index.html</a></p>

<b>Educating Entrepreneurs for the World at the EM Lyon</b>	<p><b>Country</b></p> <p>France</p> <p><b>Universities involved</b></p> <p>EM Lyon Business School (<i>Ecole de Management de Lyon</i>)</p> <p><b>Other relevant parameters of the framework</b></p> <p>Leadership and Governance Pathways for entrepreneurs</p> <p><b>References/sources of information</b></p> <p>OECD Good practices in University Entrepreneurship Support <a href="http://www.oecd.org/dataoecd/0/8/43201452.pdf">http://www.oecd.org/dataoecd/0/8/43201452.pdf</a></p> <p><a href="http://www.em-lyon.com">www.em-lyon.com</a></p> <p>Contact: Prof Alain Fayolle <a href="mailto:fayolle@em-lyon.com">fayolle@em-lyon.com</a></p>
<p><b>Key parameter:</b></p> <p><i>The university is structured in such a way that it stimulates and supports entrepreneurial learning</i></p>	
<p>EM LYON Business School's mission is summarised since 2003 as "Educating Entrepreneurs for the World". This indicates the commitment of the School to lifelong learning and to the training of entrepreneurs who are capable of creating wealth and social justice and operate in different systems across the globe.</p> <p>Activities carried out within the framework of the mission include: education and teaching (seminars, Masters degree courses and extra-curricular activities), entrepreneurship research and entrepreneurship educational research, and start-up support through provision of infrastructure (business incubator), support programmes, and access to networks. Two entrepreneurship research centres have also been established and the World Entrepreneurship Forum was held at the EM Lyon in 2008.</p> <p>The initiative mobilises a team of nine full-time professors in entrepreneurship and 1 in small business management</p>	

<b>The University of Wismar's "Entrepreneurial University" strategy supporting the learning environment</b>	<p><b>Country</b></p> <p>Germany</p> <p><b>Universities involved</b></p> <p>University of Wismar</p> <p><b>Other relevant parameters of the framework</b></p> <p>Leadership and Governance</p> <p><b>References/sources of information</b></p> <p>OECD Good practices in University Entrepreneurship Support <a href="http://www.oecd.org/dataoecd/0/8/43201452.pdf">http://www.oecd.org/dataoecd/0/8/43201452.pdf</a></p> <p>Contact: Prof. Norbert Grunwald <a href="mailto:norbert.gruenwald@hs-wismar.de">norbert.gruenwald@hs-wismar.de</a></p>
<p><b>Key parameter:</b></p> <p><i>The university is structured in such a way that it stimulates and supports entrepreneurial learning</i></p>	
<p>Building upon the 2000 initiative and supported by the 2007 change in strategy, the University of Wismar started the "Entrepreneurial University" in 2009. Its main objectives are to gather all entrepreneurship initiatives on the campus within one centre, and to spread an entrepreneurial mindset across the faculties. The "Entrepreneurial University" approach aims to spread an entrepreneurial spirit and to integrate the right set of skills into study programmes allowing to impact students, including those who might have not considered an entrepreneurial career path.</p>	

<b>The Centre for Entrepreneurship (COE) at the University of Applied Science of Jena</b>	<b>Country</b>
<b>Key parameter:</b>  <i>Entrepreneurial behaviour is supported throughout the university experience; from creating awareness and stimulating ideas through to development and implementation (pre-business and business start-up).</i>	Germany  <b>Universities involved</b>  University of Applied Sciences Jena
<p>The Centre for Entrepreneurship (COE) was established in April 2004 as an interdisciplinary centre with the aim of fostering entrepreneurship and is part of the university's technology transfer office.</p> <p>The COE seeks to facilitate cooperation between different departments and individuals in the field of entrepreneurship. The COE organises entrepreneurship education activities, provides start-up support and facilitates interaction between the entrepreneurial community and the university. Moreover it is involved in several research projects on entrepreneurship (e.g. International Comparative Study on Professional Intentions of University Students, 2008).</p>	<b>Other relevant parameters of the framework</b>  Leadership and Governance Pathways for entrepreneurs  <b>References/sources of information</b>  OECD Good practices in University Entrepreneurship Support <a href="http://www.oecd.org/dataoecd/0/8/43201452.pdf">http://www.oecd.org/dataoecd/0/8/43201452.pdf</a>  <a href="http://www.fh-jena.de/index.php/ed2c9c/881/0/0/0">www.fh-jena.de/index.php/ed2c9c/881/0/0/0</a> <a href="http://www.ideenschmiede-jena.de">www.ideenschmiede-jena.de</a>  Contact: Arndt Lautenschläger <a href="mailto:arndt.lautenschlaeger@fh-jena.de">arndt.lautenschlaeger@fh-jena.de</a>

<b>The Supporting Entrepreneurship programme at Aalborg University (SEA)</b>	<b>Country</b>
<b>Key parameter:</b>  <i>Entrepreneurial behaviour is supported throughout the university experience; from creating awareness and stimulating ideas through to development and implementation (pre-business and business start-up).</i>	Denmark  <b>Universities involved</b>  Aalborg University
<p>The Supporting Entrepreneurship programme at Aalborg University (SEA) prepares students for a career after their studies as entrepreneurial employees, researcher and also as entrepreneurs through the provision of training, mentoring and coaching and the provision of infrastructural support. SEA offers business people a unique opportunity of getting professional advice and testing of knowledge based business ideas.</p> <p>SEA works with the goal of developing most entrepreneurship activities into traditional courses and curricula of Aalborg University, or into project work that can be considered as part of the curricula. SEA also works on setting up start-up grants and has an '11th semester' option with a full focus on entrepreneurship and start up processes.</p>	<b>Other relevant parameters of the framework</b>  Pathways for entrepreneurs  <b>References/sources of information</b>  Science-to-Business Marketing Research Centre Munster University of Applied Sciences: 30 Best Case Studies of Good Practice in The Area of UBC Within Europe  <a href="http://www.sea.aau.dk">www.sea.aau.dk</a>  Contact: Morten Dahlggaard, Head of Regional Development at Aalborg University +45 22405805 <a href="mailto:mda@adm.aau.dk">mda@adm.aau.dk</a>

<b>Entrepreneurship education at Corvinus University of Budapest</b>	<b>Country</b>
<b>Key parameter:</b>  <i>Staff take an entrepreneurial approach to teaching in all departments, promoting diversity and innovation in teaching and learning.</i>	Hungary  <b>Universities involved</b>  Corvinus University of Budapest
<p>Entrepreneurship education consists of a broad range of activities and courses at Corvinus University of Budapest. Courses include small business management, business planning and also finances, and courses are also available on international entrepreneurship.</p> <p>The entrepreneurship related subjects are not just entrepreneurship oriented in their subject but also in the methods of teaching. Furthermore, the courses incorporate international experiences gained from collaborative programmes with foreign universities including the Penn State University or the CEMS (Global Alliance for Management Education) Programme.</p> <p>Professors of the university also contribute and organise many additional, extra-curricular activities and programmes, for example in the Interuniversitas Spin-off Club comprising a series of various events.</p>	<p><b>Other relevant parameters of the framework</b></p> <p>Pathways for entrepreneurs University-Business/external linkages for knowledge exchange</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://www.uni-corvinus.hu/index.php?id=44509">http://www.uni-corvinus.hu/index.php?id=44509</a></p>

<b>The Demola - a Finnish open innovation platform</b>	<b>Country</b>
<b>Key parameter:</b>  <i>The university validates entrepreneurship learning outcomes</i>	Finland  <b>Universities involved</b>
<p>Funded by the Creative Tampere Programme, Demola is a Finnish open innovation platform providing multidisciplinary students team with a collaborative innovation environment where they can create demonstrations of novel service and product concepts coming from businesses. Companies ranging from local SMEs to international large-scale enterprises as well as public organisations collaborate with the teams.</p> <p>In order to sustain the growth and future of Demola, steps are being taken to integrate innovation projects into the core university course structure. These include offering dedicated Demola courses, integrated into the curriculum, thus offering students from all local universities the chance to work in multi-disciplinary teams with support from professors and industry professional.</p>	<p>Tampere University of Technology, Tampere University of Applied Sciences, University of Tampere</p> <p><b>Other relevant parameters of the framework</b></p> <p>Pathways for entrepreneurs University – business/external relationships for knowledge exchange</p> <p><b>References/sources of information</b></p> <p>Science-to-Business Marketing Research Centre Munster University of Applied Sciences: 30 Best Case Studies of Good Practice in The Area of UBC Within Europe</p> <p><a href="http://demola.fi/">http://demola.fi/</a></p> <p>Contact: Petri Räsänen,, Demola petri.rasanen@hermia.fi</p>

<b>The “Entrepreneurial Vehicle” at the Gdańsk University of Technology</b>	<b>Country</b>

<p><b>Key parameter:</b></p> <p><i>Staff have an entrepreneurial approach to teaching in all departments</i></p>	<p>Poland</p> <p><b>Universities involved</b></p> <p>Gdańsk University of Technology</p> <p><b>Other relevant parameters of the framework</b></p> <p>Leadership and governance Pathways for entrepreneurs</p> <p><b>References/sources of information</b></p> <p>OECD Good practices in University Entrepreneurship Support <a href="http://www.oecd.org/dataoecd/0/8/43201452.pdf">http://www.oecd.org/dataoecd/0/8/43201452.pdf</a></p> <p><a href="http://www.pg.gda.pl/en/">http://www.pg.gda.pl/en/</a> <a href="http://www.arp.gda.pl/lang,2">http://www.arp.gda.pl/lang,2</a></p> <p>Contact: Prof Krzysztof Zięba <a href="mailto:kzieba@zie.pg.gda.pl">kzieba@zie.pg.gda.pl</a></p>
<p>Entrepreneurship support activities at the Gdańsk University of Technology date back to 1993. The Faculty of Management and Economics played a leading role promoting this field of activity.</p> <p>Recent faculty efforts to gather individual activities have led to the creation of the “Entrepreneurial Vehicle” initiative, which seeks to increase the number of students interested in entrepreneurship as a career option; to enhance entrepreneurial, innovative and creative ways of thinking amongst students, professors and researchers; and to develop entrepreneurial skills and know-how.</p>	

<p><b>The Kaospilots</b></p>	
<p><b>Key parameter:</b></p> <p><i>Staff have an entrepreneurial approach to teaching in all departments</i></p>	<p><b>Country</b></p> <p>Denmark</p> <p><b>Universities involved</b></p> <p>Kaospilots</p> <p><b>Other relevant parameters of the framework</b></p> <p>Leadership and governance</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on ‘The Entrepreneurial University’, April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://www.kaospilot.dk/">http://www.kaospilot.dk/</a></p>
<p>The KaosPilots is an atypical private business schools was founded in 1991 in Århus, Denmark with aim to train social and creative entrepreneurs. Four three-year long business programme are offered in English in the fields of leadership, new business design, process design and project design for challenges in business, society and organisations. The program focuses on personal development, value-based entrepreneurship, creativity and social innovation.</p> <p>The pedagogical platform is rooted in many different approaches such as reflection over action, appreciative inquiry, systems thinking, positive psychology action learning, coaching and mentoring. Students work on real projects in which they engage with business enterprises and other external organisations.</p> <p>The four study programmes are based on and aimed at practical experience and experimentation. The program focuses on providing the student with a holistic approach towards development of knowledge, skills, competencies, values, attitudes and behaviour that promotes creativity and enterprising conduct. In addition, students have the right to a minimum of two coaching sessions per year provided by teaching staff.</p>	

<p><b>Association of business to the design of discipline-based and generic learning outcomes in Flanders</b></p>	<p><b>Country</b></p>
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<p><b>Key parameter:</b></p> <p><i>The institution validates entrepreneurship learning outcomes</i></p>	<p>Belgium</p> <p><b>Universities involved</b></p> <p>Flemish HEIs</p> <p><b>Other relevant parameters of the framework</b></p> <p>University business external relationships for knowledge exchange.</p> <p><b>References/sources of information</b></p> <p>Technopolis: Institutional Case Studies on the Links Between Higher Education Institutions and Business  <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p>Learning outcomes / competences at programme and module level (presentation from Frederik De Deckerm, Senior Education Advisor at Ghent University, 2010):  <a href="http://www4066.vu.lt/Files/File/Learningoutcomes%20at%20programme%20and%20module%20level.pdf">http://www4066.vu.lt/Files/File/Learningoutcomes%20at%20programme%20and%20module%20level.pdf</a></p>
<p>Flemish universities are engaged in the process of defining together a set of common learning outcomes for implementation in all their study programmes. The process has started in 2010 and will run up until 2017 or 2018. 12 to 15 learning outcomes will be defined by cluster of disciplines (45 clusters in total which gather together about 650 programmes). The descriptors will be generic enough to provide space for each institution to develop its own approach.</p> <p>The development of learning outcomes takes place within the framework of a Steering Committee that include representatives from employers and trade unions. The work is based on the initial descriptors by each institution, which serves as a basis for joint working and development of a common methodology. The methodology is tested in three pilot disciplines and will then be expanded to the others. The final set of learning outcomes by discipline will be sent to the Dutch-Flemish Accreditation Organisation (NVAO) for approval.</p>	

<b>The Degree Plus at Queen's University Belfast</b>	
<p><b>Key parameter:</b></p> <p><i>The institution validates entrepreneurship learning outcomes</i></p>	<p><b>Country</b></p> <p>UK</p> <p><b>Universities involved</b></p> <p>Queen's University Belfast</p> <p><b>Other relevant parameters of the framework</b></p> <p>N/A</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012:  <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://www.qub.ac.uk/directorates/degreeplus/DegreePlusAward/">http://www.qub.ac.uk/directorates/degreeplus/DegreePlusAward/</a></p>
<p>The Degree Plus Award provides official recognition of extra-curricular activities and achievements, with a view to put an increasing focus on the employability skills (e.g. leadership, teamwork, communication). The Award is open to all undergraduate and postgraduate students during each academic year. Students who qualify will receive the Award alongside their degree at the time of graduation.</p> <p>An online CV builder and a recording tool - the PDP e-portfolio – can be used by students to record their achievement, develop their action plan and assess their skills.</p>	

<b>Coursera – a collaborative platform for Massive Open Online Courses (MOOCs)</b>	<b>Country</b>
<p><b>Key parameter:</b></p> <p><i>Staff take an entrepreneurial approach to teaching in all departments, promoting diversity and innovation in teaching and learning</i></p>	<p>International initiative (started in the USA)</p> <p><b>Universities involved</b></p>
<p>Coursera is a partnership of world-leading universities offering Massive Open Online Courses (MOOCs), i.e. web-based courses provided through an online platform and offered free of charge.</p> <p>Coursera was founded in the USA in 2011. So far, it has signed agreement with 16 institutions. Coursera offers courses in a wide range of topics spanning the Humanities, Medicine, Biology, Social Sciences, Mathematics, Business, Computer Science, amongst others.</p> <p>Coursera is a sign of the modernisation of pedagogical tools and the increasing global linkages between institutions. It also raises new issues in terms of recognition of online courses (e.g. incorporation of MOOCs from other universities into the courses of home students).</p>	<p>16 universities (California Institute of Technology, Duke University, Ecole Polytechnique Federale de Lausanne, Georgia Institute of Technology, Johns Hopkins University, Rice University, UC San Francisco, University of Edinburgh, University of Illinois at Urbana-Champaign, University of Toronto, University of Virginia, University of Washington, Stanford University, University of Pennsylvania, Princeton University, University of Michigan)</p> <p><b>Other relevant parameters of the framework</b></p> <p>The entrepreneurial university as an international institution.</p> <p><b>References/sources of information</b></p> <p>Technopolis, Education in the knowledge triangle study</p> <p><a href="https://www.coursera.org/">https://www.coursera.org/</a></p>

<b>Developing study programmes of relevance for industry</b>	<b>Country</b>
<p><b>Key parameter:</b></p> <p><i>Engagement of external stakeholders is a key component of teaching and learning development in an Entrepreneurial University</i></p>	<p>Slovakia</p> <p><b>Universities involved</b></p> <p>Slovak University of Technology</p>
<p>Slovak University of Technology has, in collaboration with the University of Vienna and the Automotive Cluster Vienna Region (ACVR), set up a 2-year Professional MBA programme for the Automotive Industry. This programme is aimed at training managers for the automotive and components supply industries. Its establishment was supported by the European programme of cross-border cooperation Slovakia/ Austria. The lecturers include not only academics, but also professionals working in the sector across Europe. The educational process includes visits at automotive firms in both of the countries. All courses are run in English, which allows an international student base.</p> <p>A further example of STU's cooperation with businesses in curriculum development is provided by the Faculty of Material Sciences and Technology which has been involved in project AUTOPLAST, funded by the cross-border cooperation programme Slovakia/ Czech Republic. Project partners included Automotive Cluster West Slovakia, Plastics Cluster from the Czech Republic and Trnava municipality. The overarching project objective is to develop cooperative relationships between businesses, clusters and universities in the area of plastics for automotive industry and improve the innovation potential of Trnava and Zlin regions. The specific project goals include improvement of quality of education in the area of plastics and in the medium term to conceptualise curricular development for needs of firms.</p>	<p><b>Other relevant parameters of the framework</b></p> <p>Entrepreneurship teaching and learning support The entrepreneurial university as a dynamic, proactive organisation</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://automotive.stuba.sk/">http://automotive.stuba.sk/</a> <a href="http://www.autoplast.eu/">http://www.autoplast.eu/</a></p>

## Pathways for entrepreneurs

<b>The Aalto Factories</b>	<p><b>Country</b></p> <p>Finland</p> <p><b>Universities involved</b></p> <p>Aalto University</p> <p><b>Other relevant parameters of the framework</b></p> <p>Strategy and governance The entrepreneurial university as a dynamic, proactive organisation</p> <p><b>References/sources of information</b></p> <p>Technopolis, Education in the knowledge triangle study</p> <p><a href="http://www.aalto.fi/en/">http://www.aalto.fi/en/</a></p> <p><a href="http://designfactory.aalto.fi">http://designfactory.aalto.fi</a></p>
<p><b>Key parameter:</b></p> <p><i>The institution supports innovative approaches to learning, such as the use of mentors, living labs, cross disciplinary learning, entrepreneurship champions, etc</i></p>	
<p>The Aalto Factories were launched in 2008, with three Factories set up so far in fields in which the Aalto University schools have already actively cooperated: the Design Factory, the Media Factory and the Service Factory.</p> <p>The Factories are conceived as creative spaces that foster informal meeting and collaboration at all levels. The Factories lead research and innovation projects involving students, companies and researchers and they benefit from dedicated technologies and facilities. Additional events (such as workshops and conferences) are regularly hosted. Some study programmes and courses are also directly offered in partnership with the Factories (e.g. the interdisciplinary International Design Business Management master study programme).</p>	
<b>The University of Porto's Science and Technology Park and other support to raise awareness of entrepreneurship</b>	<p><b>Country</b></p> <p>Portugal</p> <p><b>Universities involved</b></p> <p>University of Porto</p> <p><b>Other relevant parameters of the framework</b></p> <p>Entrepreneurial university as an international institution Organisational capacity, people and incentives</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://sigarra.up.pt/up/web_page.inicial">http://sigarra.up.pt/up/web_page.inicial</a></p>
<p><b>Key parameter:</b></p> <p><i>The university provides support for individuals and groups to move from entrepreneurial ideas to action</i></p>	
<p>The University of Porto seeks to promote entrepreneurship through its research and innovation functions in addition to entrepreneurial courses in education. The University of Porto's Science and Technology Park was set up in 2007 to support the development of spinoffs with rapid growth potential, to enable companies benefit from the synergies existing with the UP research departments and centres and to encourage technology transfer abroad. During the past years the incubator facilitated the launching of around 46 spinoff companies, 11 of which are currently fully operational.</p> <p>Furthermore, the TTO has sought to promote entrepreneurship in IPR in several ways. One example is the €25k competition award for the development of a business plan first launched in 2010 and attracted 46 participants. The aim is to promote entrepreneurship amongst students, alumni and researchers. The TTO also organises meetings and events bringing researchers from different research departments and institutes together to discuss issues related IPR, the commercialisation of research results and EU-funded research opportunities. Finally, it is responsible for approaching the businesses to inform about R&amp;D developments and to identify opportunities for collaboration.</p>	

<p><b>The Univations Institut for knowledge and technology transfer</b></p>	<p><b>Country</b></p> <p>Germany</p> <p><b>Universities involved</b></p> <p>Martin-Luther-Universität Halle-Wittenberg</p> <p><b>Other relevant parameters of the framework</b></p> <p>Organisational capacity, people and incentives Entrepreneurship teaching and learning</p> <p><b>References/sources of information</b></p> <p>OECD Good practices in University Entrepreneurship Support  <a href="http://www.oecd.org/dataoecd/0/8/43201452.pdf">http://www.oecd.org/dataoecd/0/8/43201452.pdf</a>  <a href="http://www.univations.de/">http://www.univations.de/</a></p>
<p><b>Key parameter:</b></p> <p><i>Entrepreneurship education activities and start-up support are closely integrated</i></p>	
<p>The Univations Institute of Technologie and Knowledge Transfer started in 2004 with the goal of spreading an entrepreneurial culture in the Sachsen-Anhatl region amongst students, researchers, professors, and the university administration, and to accompany students, graduates and researches during the business start-up process.</p> <p>The Univations Institute provides a forum for academia and industry to promote innovation dynamics and networking. It offers students, graduates, alumni and academic staff, comprehensive assistance especially for technology-based start-up projects. It also coordinated interdisciplinary project groups to develop innovative products, services and business models. It works with regional and national networks, innovation clusters, trade associations and technology centres and incubators, and advises companies accurately and independently and receive assistance in implementing their business concepts.</p>	

## University-business relations/external linkages for knowledge exchange

<b>Mandatory internships and apprenticeship programmes in engineering</b>	<b>Country</b> France  <b>Universities involved</b> Compiègne University of Technology  <b>Other relevant parameters of the framework</b> Entrepreneurship teaching and learning  <b>References/sources of information</b> Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a>  <a href="http://www.utc.fr/the_university/index.php">http://www.utc.fr/the_university/index.php</a>
<b>Key parameter:</b>  <i>The university specifically supports staff and student mobility between academia and the external environment.</i>	
<p>Studies at Université de Technologie de Compiègne (UTC) involve two internship periods of six months each during the third and sixth semesters of studies. The University visit interns on site, as a way to monitor the working conditions for its students and to provide opportunities to businesses hosting interns to feed back on their needs. Around 1,500 students are placed in enterprises each year.</p> <p>In addition, UTC offers an engineering degree in mechanics through apprenticeship. Apprenticeship is yet little developed in French engineering training and the UTC is one pioneer within this domain. The degree delivered in the same degree as for other programmes (general engineer), while being a way to increase students' awareness of the industrial world and of industrial values.</p>	

<b>Undergraduate placements: The University's of Limerick CoOp Programme</b>	<b>Country</b> Ireland  <b>Universities involved</b> University of Limerick  <b>Other relevant parameters of the framework</b> Entrepreneurship teaching and learning  <b>References/sources of information</b> Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/doc/business/studies/limerick_en.pdf">http://ec.europa.eu/education/higher-education/doc/business/studies/limerick_en.pdf</a>
<b>Key parameter:</b>  <i>The university specifically supports staff and student mobility between academia and the external environment</i>	
<p>The Cooperative Programme (CoOp) at the University of Limerick is a formal, compulsory and integrated part of every undergraduate degree in which some 2,000 undergraduate take part annually. The University has an established network of over 1,700 Cooperative Education employers who provide a range of relevant career experience in industry, commerce, public service and other professions- about 30 per cent of which are international participants.</p> <p>Typically, placements last for a series of 8 months, prior to which every student are trained by the university. As part of the programme, a faculty member is also required to visit the student and the supervisor, to monitor progress, their skills development, and their contribution to the organisation. Employers are asked to evaluate students on 10 different criteria including professional skills, interpersonal relations, and organisational effectiveness skills. Similarly students are asked to judge these skills before and after placement. This means that the faculty as well as students is able to enter in full partnership and react to the experience.</p> <p>The success of the programme can be seen in the fact that about 75 per cent of the employers who hosted students hire them one they graduate.</p>	

<b>The Career Development Office (CDO) at Corvinus University of Budapest</b>	<b>Country</b>
<b>Key parameter:</b>  <i>The university demonstrates active involvement in partnerships with a wide range of stakeholders. The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem</i>	Hungary  <b>Universities involved</b>  Corvinus University of Budapest  <b>Other relevant parameters of the framework</b>
<p>The Career Development Office (CDO) at Corvinus University was established in 1996 as the first career office in Central and Eastern Europe with the aim to respond to the emerging needs and expectations of the incoming multinational corporations. In 2010, a central decision was made to create one unit at the university to integrate business relations and communication activities with the task to provide a unified platform towards businesses. The Career Development Office was made responsible for these integrated activities in addition to graduate tracking, maintaining the alumni of the university, providing help to the students in finding placements (which are compulsory in all study programmes) and also workplaces after graduation.</p> <p>The professor chair scheme provides the opportunity for establishing long-term strategic partnership between the university and businesses. Companies provide 5-year financial support for the research activities of a professor in a subject field of their interest, selected on a competitive basis. In return the professors have to fulfil the reporting obligations of both the company and the university, submit annual reports to the supporting company, participate in the education activities of the company if agreed, and both parties ensure high-level representation at each other's relevant events.</p>	Organisational capacity, people and incentives  <b>References/sources of information</b>  Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/doc/business/studies/corvinus_en.pdf">http://ec.europa.eu/education/higher-education/doc/business/studies/corvinus_en.pdf</a>  <a href="http://www.uni-corvinus.hu/index.php?id=44509">http://www.uni-corvinus.hu/index.php?id=44509</a>

<b>The General Foundation of the Autonomous Community of Madrid (FGUAM)</b>	<b>Country</b>
<b>Key parameter:</b>  <i>The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem</i>	Spain  <b>Universities involved</b>  Autonomous University of Madrid  <b>Other relevant parameters of the framework</b>
<p>The General Foundation of the Autonomous Community of Madrid (FGUAM) was set up to serve as a bridge between the Autonomous University of Madrid and the region, placing the University's research, teaching and collaboration capacities at the disposal of the region/society. The aim is to ensure UAM's research, teaching and collaboration capacity is underpinned by an in-depth understanding of the regional needs. The Foundation facilitates the offering of services adapted to those needs and covering different spheres (academic-scientific, business, social, cultural and management, creative, innovative).</p>	The entrepreneurial university as an international institution  <b>References/sources of information</b>  Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a>  <a href="http://www.fuam.es/">http://www.fuam.es/</a>

<b>Autonomous University of Madrid's Industry sponsored chairs</b>	<b>Country</b>
<b>Key parameter:</b>  <i>The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem</i>	Spain  <b>Universities involved</b>  Autonomous University of Madrid
<p>The Autonomous University of Madrid (UAM) rates among the top three Spanish universities in terms of the total number of sponsored research chairs. UAM sponsored chairs cover a broad spectrum of research fields, ranging from the most innovative industries in the fields of medicine and health, economy and real estate, to the environment and disability biopsychology.</p> <p>Examples include:</p> <ul style="list-style-type: none"> <li>• Three chairs within the Polytechnic School at UAM) focusing on joint R&amp;D, innovation, training and dissemination activities in areas related to the IIC activities, notably behaviour patterns analysis, machine learning in modelling, and, finally, psychometric models and applications;</li> <li>• The Chair UAM-Roche Farma in the School of medicine – sponsored by Roche Farma since 2003;</li> <li>• The Pfizer theory of medicine Chair established in 2007 and renewed in 2010;</li> <li>• The Telefónica-sponsored Chair focusing on biometric recognition technologies, set up in 2010;</li> <li>• The more recently established Chairs sponsored by key industries, including MundiPharma Pharmaceutical, Fundación PRODIS, Laboratorios SALVAT and RENFE-FEAPS.</li> </ul>	<b>Other relevant parameters of the framework</b>  N/A  <b>References/sources of information</b>  Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a>

<b>Autonomy of professor in the conduct of their activities</b>	<b>Country</b>
<p><b>Key parameter:</b></p> <p><i>The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem</i></p>	<p>Belgium</p> <p><b>Universities involved</b></p> <p>KU Leuven (<i>Katholieke Universiteit Leuven</i>)</p>
<p>The University collaborates with local SMEs as well as with major international firms. KUL both benefits from regional structures and policies and has had over years a great impact on Leuven and Flemish economic and innovative activities, as follows:</p> <ul style="list-style-type: none"> <li>• Support for spin-off provided by LRD relies on the 'Innovation and Incubation centre" jointly owned by the University and the regional development agency and located on the KUL campus;</li> <li>• Three science parks (Haasrode, Arenberg, Termunck) supported by Flanders and the City of Leuven have been developed around KUL. They host spin-offs of the University together with R&amp;D departments of business enterprises;</li> <li>• LRD's activities have spread across Flanders to the 12 HEI members of the KUL Association since 2006. LRD has therefore extended its role within the Region as a cross-university technology transfer office.</li> </ul> <p>One of the best examples of the intertwining between the University and its socio-economic environment is IMEC. Created in 1982 by the Flemish Government as a laboratory for advanced research in microelectronics, IMEC aims at strengthening the microelectronics industry in Flanders. The decision for its establishment was inspired by the strategic importance of microelectronics for the industry, and was fostered by the KUL, which provided most of the staff employed in the laboratory.</p>	<p><b>Other relevant parameters of the framework</b></p> <p>Pathways for entrepreneurs University-business/ external linkages for knowledge exchange</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://www.kuleuven.be/english">http://www.kuleuven.be/english</a></p>

<b>The University of Nottingham Community Engagement Strategy 2009-2014</b>	<b>Country</b>
<p><b>Key parameter:</b></p> <p><i>The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem</i></p>	<p>UK</p> <p><b>Universities involved</b></p> <p>University of Nottingham</p>
<p>The University of Nottingham Strategy commits the university to local engagement with the city communities.</p> <p>Five key themes are included in the Strategy: opening up the university's physical environment and infrastructures, sharing and exchanging knowledge and skills, Contributing to key civic agenda, being good neighbours, promoting and progressing education.</p>	<p><b>Other relevant parameters of the framework</b></p> <p>Leadership and governance</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://www.nottingham.ac.uk/community/documents/communityengagementstrategy.pdf">http://www.nottingham.ac.uk/community/documents/communityengagementstrategy.pdf</a></p>

<b>The Cambridge ecosystem</b>	
<p><b>Key parameter:</b></p> <p><i>The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem</i></p>	<p><b>Country</b></p> <p>UK</p> <p><b>Universities involved</b></p> <p>Cambridge University</p> <p><b>Other relevant parameters of the framework</b></p> <p>Strategy and governance Resources and infrastructures</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://www.cam.ac.uk/">http://www.cam.ac.uk/</a></p>
<p>The "Cambridge ecosystem" is a term used to describe the rapid and successful growth of science-based industry in and around the city, which has established a reputation as one of the most successful technology business clusters in the world and are based on the collaboration between academia and the private sector. Cambridge is surrounded by science parks, incubators and innovation centres which are home to a mixture of start ups, local high-tech businesses and UK subsidiaries of international companies. Business support and investment can be found via venture capitalist companies, business angels and numerous informal and formal business networks.</p> <p>This cluster effect has been brought about by people pulling in the resources needed to make a business happen through personal connections made at informal levels, rather than being driven or managed by an overarching organisation, structures or systems.</p> <p>Today, Cambridge Enterprise is one of the UK's most successful technology transfer offices. Student-led initiatives play a critical role in the ecosystem with Cambridge University Entrepreneurs running some of Europe's most successful business creation competitions and training events, and Cambridge University Technology and Enterprise Club running the annual international Technology Ventures Conference as well as other VC-related events throughout the year. These organisations, and many other innovation and entrepreneurship-related groups and programmes, are linked together through shared events and through the Cambridge University Enterprise Network.</p>	

<b>BioCity Turku</b>	
<p><b>Key parameter:</b></p> <p><i>The university has strong links with incubators, science parks and other external initiatives, creating opportunities for dynamic knowledge exchange</i></p>	<p><b>Country</b></p> <p>Finland</p> <p><b>Universities involved</b></p> <p>University of Turku</p>
<p>The Turku Science Park, owned by the City of Turku, is a business incubator providing modern facilities and bringing together academic and business expertise at a shared location. The Science Park hosts the biotechnology (BioCity) and ICT clusters of the Southwest Finland region.</p> <p>BioCity Turku was established in 1984 by the Abo Akademi University and the University of Turku, which has been traditionally strong in the field of life sciences and biotechnology. Its aim is to bring resources together, to share location and facilities and to create a bioscience hub in Turku. BioCity comprises research units of the two universities, and the campus also hosts Turku University Central Hospital, VTT's Medical Biotechnology Unit, the National Public Health Institute, and many businesses active in biosciences. The shared facilities offer the possibility of interaction between the different universities, with the business world and with other research units. The close collaboration of the two universities also enables broad access to the knowledge base of the different faculties and promotes multidisciplinary research in the field of biotechnology.</p>	<p><b>Other relevant parameters of the framework</b></p> <p>The entrepreneurial university as an international institution</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business:  <a href="http://ec.europa.eu/education/higher-education/doc/business/studies/turku_en.pdf">http://ec.europa.eu/education/higher-education/doc/business/studies/turku_en.pdf</a></p> <p><a href="http://www.turkusciencepark.com/">http://www.turkusciencepark.com/</a></p>

## The Entrepreneurial University as an international institution

<p><b>Recruitment process fostering non-academic staff at the Université de Technologie de Compiègne</b></p>	<p><b>Country</b></p> <p>France</p> <p><b>Universities involved</b></p> <p>Compiègne University of Technology</p> <p><b>Other relevant parameters of the framework</b></p> <p>Strategy and governance</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business  <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://www.utc.fr/the_university/index.php">http://www.utc.fr/the_university/index.php</a></p>
<p><b>Key parameter:</b></p> <p><i>The institution seeks and attracts international and entrepreneurial teaching staff</i></p>	
<p>Université de Technologie de Compiègne's situation is quite unique within the French context. It was set up in 1972 as an experiment to develop a new kind of relationship between enterprises and the universities, as well as to adapt academic research and training to industrial needs. The originality of its statutes offers the University wider opportunities to cooperate with business enterprises than traditional French universities.</p> <p>The UTC statutes were drafted in order to ensure the openness of the University towards the regional and national socio-economic environment. In particular, the University can recruit one third of its teaching staff directly by contract without them having to go through the traditional recruitment process in French universities. It allows the University to recruit a large proportion of people working in industry.</p> <p>In addition, business enterprises form 50% of the Administrative Board of the University and they are also present on various other committees (e.g. scientific committee, education committee).</p>	
<p><b>University of Turku's international Master programmes</b></p>	<p><b>Country</b></p> <p>Finland</p> <p><b>Universities involved</b></p> <p>University of Turku</p> <p><b>Other relevant parameters of the framework</b></p> <p>N/A</p> <p><b>References/sources of information</b></p> <p>Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business:  <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a></p> <p><a href="http://www.utu.fi">www.utu.fi</a></p>
<p><b>Key parameter:</b></p> <p><i>The institution demonstrates internationalisation in its approach to teaching</i></p>	
<p>The strategy of the Finnish Ministry of Education and culture puts large emphasis on increased level of internationalisation, which is also reflected in the University of Turku's strategic agenda.</p> <p>The University is very active in international relations through collaborative research projects and programmes; participation in international networks; participation in international conferences and receiving visiting professors; student and staff exchanges and also joint curriculum development and degrees. The International Office of the University facilitates the international mobility of students, researchers and teachers.</p> <p>The University offers 16 international Master's degree programmes all but one taught in English. International relations are also important part of the executive education programmes, where the language of education became English and international study weeks in e.g. Texas or Hong-Kong, form integral part of the programme.</p>	

<b>The Babeş-Bolyai University's international agreements and partnerships</b>	<b>Country</b>
<b>Key parameter:</b>  <i>The institution and its departments actively participate in international networks</i>	Romania  <b>Universities involved</b>  Babeş-Bolyai University
<p>The Babeş-Bolyai University has extensive international relations that are coordinated by the Centre for International Cooperation, which is led by the Vice-Rector in charge of international relations.</p> <p>The university has inter-university agreements and partnerships with more than 200 higher education institutes from 36 countries across six continents. Furthermore, individual departments have additional contacts with foreign universities. The University has numerous joint degrees at different levels with partner universities. The international relations of the University are reported even to be stronger and more efficient in some cases than domestic relations.</p> <p>The Centre for International Cooperation develops, facilitates and coordinates the University's international relations especially the activities based on bilateral agreement, trans-European and trans-Atlantic programmes. Furthermore the Centre provides support to foreign students, teaching staff and student mobility, information exchange and it also contributes to promoting the University's educational programmes abroad.</p>	<b>Other relevant parameters of the framework</b>  N/A  <b>References/sources of information</b>  Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a>  <a href="http://www.cci.ubbcluj.ro/">http://www.cci.ubbcluj.ro/</a>

<b>The Baltic University Programme</b>	<b>Country</b>
<b>Key parameter:</b>  <i>The institution and its departments actively participate in international networks</i>	Baltic Sea region  <b>Universities involved</b>
<p>The Baltic University Programme is a network comprising some 225 higher education institutions around the Baltic Sea region. It was created to promote innovative interactions between regional universities and between universities and societies. The Programme focuses on questions of sustainable development, environmental protection, and democracy in the Baltic Sea region.</p> <p>There are around 1,500 teachers and researchers contributing to the network activities, and 9,500 students take part on an annual basis. The network is led by the Baltic University Programme Secretariat, which is part of Uppsala Centre for Sustainable Development at Uppsala University in Sweden.</p> <p>The main activities arising from the BUP strategy are the development of university courses and teacher training tailored to the Baltic Sea region, and participation in educational and scientific projects in cooperation with both public and private partners.</p>	230 higher education institutions around the Baltic Sea region  <b>Other relevant parameters of the framework</b>  N/A  <b>References/sources of information</b>  Technopolis, Institutional Case Studies on the Links Between Higher Education Institutions and Business: <a href="http://ec.europa.eu/education/higher-education/business-case_en.htm">http://ec.europa.eu/education/higher-education/business-case_en.htm</a>  <a href="http://www.balticuniv.uu.se/">http://www.balticuniv.uu.se/</a>

<b>The International Entrepreneurship Network SIFE</b>	<b>Country</b>
<b>Key parameter:</b> <i>The institution and its departments actively participate in international networks</i>	47 countries (international) <b>Universities involved</b> About 1500 universities
<p>SIFE is an international non-profit organization that works with leaders in business and higher education to mobilize university students to make a difference in their communities while developing the skills to become socially responsible business leaders.</p> <p>Participating students form teams on their university campuses and apply business concepts to develop outreach projects that improve the quality of life and standard of living for people in need. An annual series of regional and national competitions provides a forum for teams to present the results of their projects, and to be evaluated by business leaders serving as judges. Finalists in each country take part in SIFE World Cup. In addition to the community aspect of the program, SIFE's leadership and career initiatives create meaningful opportunities for learning and exchange among the participants as well as the placement of students and alumni with companies in search of emerging talent.</p>	<p><b>Other relevant parameters of the framework</b></p> <p>Entrepreneurship teaching and learning Pathways for entrepreneurs</p> <p><b>References/sources of information</b></p> <p>NCEE, PowerPoint presentation by Paul Hannon, conference on 'The Entrepreneurial University', April 2012: <a href="http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf">http://www.entrepreneurial-universities.com/pdf/Paul%20Hannon.pdf</a></p> <p><a href="http://www.sife.org/">http://www.sife.org/</a></p>

<b>Education for Global Citizenship at the University College London</b>	<b>Country</b>
<b>Key parameter:</b> <i>The institution demonstrates internationalisation in its approach to teaching</i>	UK <b>Universities involved</b> University college London
<p>UCL strives both to develop the professional skills of its students, and to give them the aptitude to have impact in their personal and social life (e.g. leadership, creativity, constructive criticism, ambition, ethics, cultural differences, entrepreneurship and innovation). In this way, a UCL graduate is both highly employable and ready to engage actively in the world and the community, as a 'global citizen':</p> <p>UCL's approach of an 'Education for Global Citizenship' is illustrated in that degree courses are designed to ensure that students are developing an interdisciplinary, global and multi-dimensional perspective on their subjects.</p> <p>In addition, extra-curricular activities are seen as an integral element of UCL education, with students being encouraged to become fully involved in university life (through the Student Union's many clubs and societies) and to lead innovative initiatives</p> <p>Students are also fully involved in the volunteering and outreach activities carried out by the university (e.g. Student Ambassador Scheme to promote higher education in schools in the London area, Tutors and Mentors scheme to support promising pupils from these same schools)</p>	<p><b>Other relevant parameters of the framework</b></p> <p>Entrepreneurship teaching and learning</p> <p><b>References/sources of information</b></p> <p>Technopolis, Education in the knowledge triangle study</p> <p><a href="http://www.ucl.ac.uk/">http://www.ucl.ac.uk/</a></p>

## DEFINING THE ENTREPRENEURIAL UNIVERSITY

As highlighted, to find a single definition of the Entrepreneurial University which works across the European Higher Education Area is difficult and controversial. There is no one-size-fits-all definition of the Entrepreneurial University, but rather that there is an invaluable plurality of approaches, inventive, creative and yet practical, which distinguish the entrepreneurial style. At the conceptual level, there is a significant body of literature concerning the entrepreneurial university, approaching the concept from a variety of angles including research, education, innovation, new public management and leadership. Figure 1 below shows some of the features adduced by authors to support the definition of the entrepreneurial university.

**Figure 1 Definitions of an Entrepreneurial University**

Year	Author	Definition
1983	Etzkowitz	“Universities that are considering new sources of funds like patents, research funded by contracts and entry into a partnership with a private enterprises”
1995	Chrisman, Hynes and Fraser	The entrepreneurial university involves “the creation of new business ventures by university professors, technicians, or students.”
1995	Dill	“University Technology Transfer is defined as formal efforts to capitalise upon university research by bringing research outcomes to fruition as commercial ventures. Formal efforts are in turn defined as organisational units with explicit responsibility for promoting technology transfer”
1998	Clark	Seeks to innovate in how it goes to business, to work out a substantial shift in organizational character, to become “stand-up” universities that are significant actors in their own terms.
1998	Röpke	Mean three things: the university itself, the members of the university – faculty and the interaction of the university with the environment.
1999	Subotzky	Is characterised by closer university-business partnerships, by greater faculty responsibility for accessing external sources’ of funding and by a managerial ethos in institutional governance, leadership and planning
2002	Kirby	Have the ability to innovate, recognize and create opportunities, work in teams, take risks and respond to challenges....
2003	Etzkowitz	Is a natural incubator, providing support structures for teachers and students to initiate new ventures: intellectual, commercial and conjoint
2003	Williams	Is nothing more than a seller of services to the knowledge industry
2003	Jacob, M, Lundqvist and Hellsmark,	Is based both on commercialisation (custom made further education courses, consultancy services and extension activities) and commoditization (patents, licensing or student owned start-ups)
2006	Guerrero-Cano, Kirby, and Urbano	“...Entrepreneurial University is defined as a university that has the ability to innovate, recognise and create opportunities, work in teams, take risks and respond to challenges (Kirby, 2002a), on its own, seeks to work out a substantial shift in organisational character so as to arrive at a more promising posture for the future (Clark, 1998). In other words, is a natural incubator that provides support structures for teachers and students to initiate new ventures: intellectual, commercial and conjoint (Etzkowitz, 2003).”

Source: Adopted and adapted from Guerrero-Cano, Kirby, and Urbano<sup>5</sup>

<sup>5</sup> A LITERATURE REVIEW ON ENTREPRENEURIAL UNIVERSITIES: AN INSTITUTIONAL APPROACH: Maribel Guerrero-Cano David Urbano, David Kirby A Working Paper in the Documents de treball d'economia de l'empresa series (2006) updated

These features highlight the wide definition of the entrepreneurial university, bringing many stakeholders and systems into play. There is the university itself, how it is managed as an organisation, its functions and structures. Then there is the staff, and the growing need to encourage a more entrepreneurial mindset and behaviour, which can include students and the growing trend of the delivery of entrepreneurial education. There are also the knowledge alliances – the interaction between the university and other players in the environment in which they operate, including many businesses and other entities.

At the practical level, Paul Hannon, acting CEO of the UK National Centre for Entrepreneurship in Education suggests that the entrepreneurial university can be defined in terms of its importance because:

- knowledge is no longer the domain of universities
- Universities funded by the public purse are under immense pressure and scrutiny to add more value to the economy and society - and become less dependent on the state
- competition from the private sector is being encouraged and is growing
- employers/parents/graduates are seeking and demanding ways to improve future potential/ lives/ careers

**.. and especially in tough times..**

- it is long understood that environments which are highly complex, unpredictable and uncertain demand an entrepreneurial response to survive/succeed;
- our current economic conditions are due to the impact of globalisation, international trade and competition

**.. and therefore requires**

- recognition that universities need to be more flexible, more porous, more adaptable;
- strong leadership and an environment that encourage the development and display of entrepreneurial behaviours and actions

So, the definition of the entrepreneurial university is informed by:

- the institutional environment: systems/processes, policies, practices, culture, leadership
- the staff/people : entrepreneurial spirit, rewards/incentives, support/development, role models
- the students: opportunities, engagement, networks/contacts, learning by experience and failing
- the impact: affects on the institution and its people, on graduates, on stakeholders, on wider community and ecosystem

This Guiding Framework is attempting to reflect the diverse characteristics of the Entrepreneurial University so that all University can recognise themselves and potential areas for development. The following bibliography brings together some of the main documents used to inform this study and which can be used as references for universities exploring the concepts and issues.

# Summary of the Guiding Framework

## 1 Leadership and Governance

<p><b>1. Entrepreneurship is a major part of the university strategy.</b></p>  <p>0 2 4 6 8 10</p>
<p><b>2. There is commitment at a high level to implementing the entrepreneurial strategy.</b></p>  <p>0 2 4 6 8 10</p>
<p><b>3. The university has a model for coordinating and integrating entrepreneurial activities at all levels across the university.</b></p>  <p>0 2 4 6 8 10</p>
<p><b>5. The faculties and units have autonomy to act.</b></p>  <p>0 2 4 6 8 10</p>
<p><b>6. The university is a driving force for entrepreneurship development in the wider regional, social and community environment.</b></p>  <p>0 2 4 6 8 10</p>

## 2. Organisational Capacity, People and Incentives

**1. The university has a sustainable financial strategy in place to support entrepreneurial development.**



**2. The university's entrepreneurial objectives are supported by a wide variety of funding sources/investment, including investment by external stakeholders.**



**3. There are mechanisms in place for breaking down traditional boundaries and fostering new relationships - bringing internal stakeholders together (staff and students) and building synergies between them.**



**4. The university is open to recruiting and engaging with qualified individuals with entrepreneurial attitudes, behaviours and experience.**



**5. The university invests in staff development to support its entrepreneurial agenda.**



**6. There are clear incentives and rewards for staff who actively support the university's entrepreneurial agenda.**



**7. The university gives status and recognition to other stakeholders who contribute to the university's entrepreneurial agenda.**



### **3. Entrepreneurship development in teaching and learning**

**1. The university is structured in such a way that it stimulates and supports the development of entrepreneurial mindsets and skills.**



**2. Entrepreneurial training for staff takes place in all parts of the university.**



**3. Staff take an entrepreneurial approach to teaching in all departments, promoting diversity and innovation in teaching and learning.**



**4. Entrepreneurial behaviour is supported throughout the university experience; from creating awareness and stimulating ideas through to development and implementation (pre-business and business start-up).**



**5. The university validates entrepreneurship learning outcomes.**



**6. Engagement of external stakeholders is a key component of teaching and learning development in an Entrepreneurial University**



**7. Research results are integrated into entrepreneurship education and training.**



## 4. Pathways for entrepreneurs

**1. The university raises awareness of the value/importance of developing entrepreneurial abilities amongst staff and students.**



**2. The university actively encourages individuals to become entrepreneurial.**



**3. The university provides opportunities to experience entrepreneurship.**



**4. The university provides support for individuals and groups to move from entrepreneurial ideas to action.**



**5. Mentoring by academic and industry personnel is available.**



**6. The university facilitates access to private financing for its potential entrepreneurs.**



**7. The university provides access to business incubation facilities.**



## 5. University – business/external relationships for knowledge exchange

1. The university is committed to knowledge exchange with industry, society and the public sector.



2. The university demonstrates active involvement in partnerships and relationships with a wide range of stakeholders.



3. The university has strong links with incubators, science parks and other external initiatives, creating opportunities for dynamic knowledge exchange.



4. The university provides opportunities for staff and students to take part in entrepreneurial activities with business/the external environment.



5. The university specifically supports staff and student mobility between academia and the external environment.



6. The university links research, education and industry (wider community) activities together to affect the whole knowledge ecosystem.



## **6. The Entrepreneurial University as an international institution**

**1. Internationalisation is a key part of the university's entrepreneurial strategy.**



**2. The university explicitly supports the international mobility of its staff and students (including PhD students).**



**3. The university seeks and attracts international and entrepreneurial staff (including teaching, research and PhDs)**



**4. The university demonstrates internationalisation in its approach to teaching.**



**5. The university, its departments and faculties actively participate in international networks.**



## 7. Measuring the impact of the Entrepreneurial University

1. The university assesses the impact of its strategy on entrepreneurship across the institution.



2. The university assesses the level of engagement in entrepreneurial teaching and learning across the institution.



3. The university assesses the impact of entrepreneurial teaching and learning.



4. The university regularly assesses the impact of entrepreneurship teaching and learning.



5. The university carries out regular monitoring and evaluation of the universities' knowledge exchange activities.



6. The university carries out regular monitoring and evaluation of the impact of start-up support.



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