A practical guide to entrepreneurial change processes in higher education institutions

Andrea Kottmann

Ben Jongbloed

CHEPS, University of Twente

25 March 2022

Contents

What these guidelines are about...

These guidelines intend to support institutional practitioners engaging in entrepreneurial change processes in their universities. The guidelines aim to provide knowledge for the following points:

- A sketch of the specific character of entrepreneurial change processes in higher education institutions and how to envisage the process in general (also to be able to plan accordingly),
- On barriers that could hinder these change processes and what good practices have been employed to overcome them

Further, this paper will formulate guidelines to support practitioners in higher education institutions in planning and supervising entrepreneurial change processes.

The paper is organised into four sections. Section 1 will inform about the specific character of the entrepreneurial change process in higher education institutions. This section will inform about the major changes that higher education institutions need to be aware of when implementing entrepreneurship. Also, the section presents an analytical framework that defines elements of the change process and identifies the factors that can influence them.

Section 2 provides insights into how higher education institutions select activities that aim to implement entrepreneurship. The section will present means and tools higher education institutions can use to make informed decisions when implementing the entrepreneurial agenda.

Section 3 addresses barriers that are frequently faced in institutional change processes. Also, selected solutions how to overcome these challenges will be studied.

Section 4 summarises the lesson learned as general guidelines for achieving entrepreneurial change in higher education institutions.

The paper draws on the document analysis and literature review done for the BeyondScale project and the experiences BeyondScale partners have had in implementing their change projects.

1. Institutional change processes in general

Changing higher education institutions is a particular process: on the one hand, these processes are similar to those in other organisations as their implementation requires planning, resources monitoring, and management. On the other hand, due to the specific character of higher education institutions, i.e. foremost, being a professional organisation, change management in higher education institutions has to overcome specific challenges. These hurdles include strong disciplinary cultures in the professional core of the institutions and the loose coupling and compartmentalisation of faculties. These are particularly challenging when institutional management aims to embed whole-institution approaches, considers the diversity of academic cultures, and bridges between the faculties and departments.

Current demands from the institutional environment, in particular, demands to become more entrepreneurial, i.e., strengthen the collaboration with the business and social sector, engage in

Co-funded by the Erasmus+ Programme of the European Union

regional development, provide multidisciplinary responses to wicked societal problems, implement sustainability, and create entrepreneurial skills in graduates. This requires large-scale change processes, which also target deeper structures such as cultures, values and patterns of cooperation with internal and external stakeholders.

While implementing entrepreneurship might take individual pathways in higher education institutions, each change extends to five key dimensions that should be considered when designing interventions.

According to most authors, entrepreneurial universities differ from the more traditional universities. Most of them also point out that entrepreneurship does not represent an additional new task for HEIs, but it is understood as one of their functional–embedded – principles. Some of the authors on entrepreneurial universities assume that the implementation of entrepreneurship in higher education institutions also results in a transformation of their organisational character, with new tasks, new forms of cooperation within and outside the university, new forms of control and governance structures, as well as a change in the institutional culture from academic to more managerial values (see, e.g., Guerrero-Cano et al. 2006).

These assumptions are in line with Burton Clark's famous study (1998), in which he identified five elements that a university will need to address when transforming into an entrepreneurial university (see Figure 1):

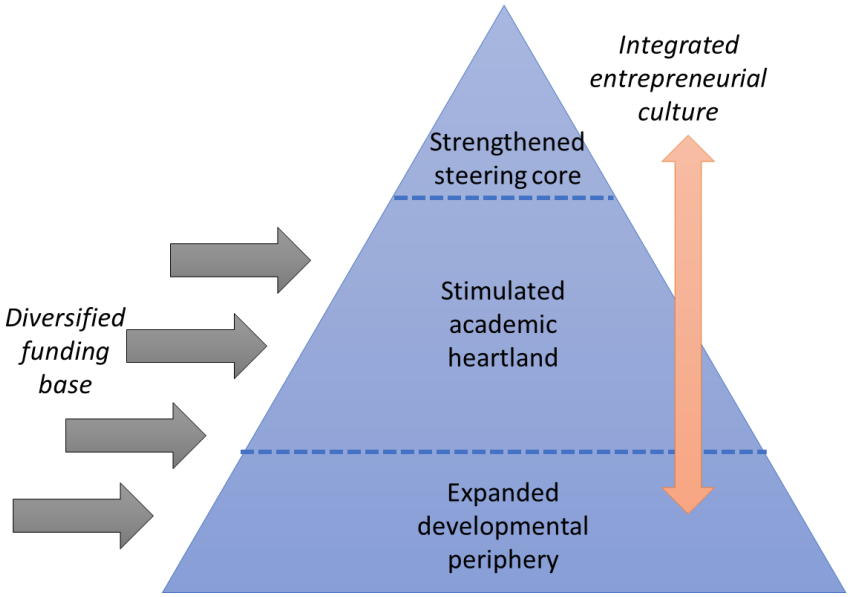
1. **Strengthened steering core** – This core refers to the institutions' capacities to steer themselves, which is an essential requirement for HEIs to become entrepreneurial. Many HEIs traditionally had weak competencies in steering, but nowadays many are required to bolster their managerial capacities to better adapt to external demands. While a strengthened steering core can take different shapes, Clark suggests that a management approach that embraces the whole of the institution, i.e., involving central faculty in the decision-making and fusing academic with managerial values, can successfully support the entrepreneurial transformation. Also, different leadership styles can support entrepreneurial activities.

Co-funded by the Erasmus+ Programme of the European Union

2. **Expanded developmental periphery** – Entrepreneurial universities frequently establish infrastructures that allow them to collaborate with outside groups and organisations. These structures are different from the traditional disciplinary organisation of higher education institutions: Specialised units, such as knowledge transfer or industrial liaison offices, work across disciplinary and institutional boundaries and aim at addressing societal problems in projects with these outside partners. The establishment of this expanded periphery and its integration in the day-to-day functioning is a challenge to HEIs: they must develop competencies to cross boundaries and collaborate with the outside stakeholders, but also be able to exploit the new structures and its outputs internally. Also, they need to avoid the development of a dual structure which is only loosely coupled.
3. **Diversified funding base** – Entrepreneurial universities gain their funding from different sources. Diversifying the funding base can increase the HEI's income and allows them to cross-subsidise activities within the organisation. For public universities, second- and third-income streams such as project funds, contract research and contract teaching, are becoming increasingly important revenue streams besides the state funding. Diversifying the funding base also challenges HEIs to build capacities and capabilities to generate these third-party funds, e.g., through the participation in tenders issued by research councils, or setting up (research-) projects with outside partners from industry or the social sector.
4. **Stimulated academic heartland** – Becoming more entrepreneurial across the whole of the HEI requires that also the traditional units and staff engage with the institution's new departments and incorporate the more managerial values. A major challenge is to create acceptance of the new developments among academic staff to prevent the creation of a dual structure, in which two cultures, the entrepreneurial and the academic exist next to each other. An implementation approach that evaluates the needs and capabilities of academic departments individual and carefully is more likely to create this acceptance. Also, a stepwise introduction will increase acceptance.
5. **Integrated entrepreneurial culture** – Entrepreneurial universities have a culture that embraces change. This feature enables them to flexibly adapt to the external demands and facilitates collaboration with outside groups and organisations. As entrepreneurship is a new activity area for most HEIs, an integrated entrepreneurial culture can result from strong entrepreneurship ideas and examples. In some universities, the narrative of an entrepreneurship saga may help to integrate such a culture, - even when few entrepreneurship practices are in place.

Co-funded by the Erasmus+ Programme of the European Union

Figure 1: The entrepreneurial university and its characteristics (after Burton Clark, 1998)



Source: Authors (inspired by Clark, 1998)

The introduction of an entrepreneurial agenda in HEIs thus represents a multidimensional and complex change process that requires specific and creative management approaches. In particular, the formation and integration of new structures, roles, and values into the already existing structures is a major challenge for HEIs in adequately dealing with the demands of external stakeholders.

In the scientific literature – to the best of our knowledge – no studies can be found in which a generalisable model for the transformation or the creation of entrepreneurial universities is presented. Instead, there is a large number of case studies describing individual approaches or individual measures, such as the introduction of entrepreneurship modules in education or the establishment of knowledge transfer offices (see for an overview: Cerver Romero et al. 2021).

This situation poses great challenges to HEIs that are at the beginning of such a change process. For them, it is difficult to find role-models or good practices of comparable HEIs from which they could learn. Often, they have to shape the introduction of the entrepreneurial agenda without having sufficient capacity and experience, that is they may struggle in developing an idea, specifying goals, or selecting and implementing specific measures and actions (say, interventions). For HEIs, this entails two risks: on the one hand, potentially high investment costs, and on the other hand, the possibility that the transformation does not achieve the desired outcomes because measures are not aligned with the needs, characteristics, and requirements of internal and external stakeholders.

This challenge can lead to HEIs choosing not to implement the entrepreneurial agenda or to choose inappropriate targets and interventions, which can also cause the transformation to fail.

Here it can be helpful to provide HEIs with tools and information that enable them to shape the change process in an informed way. This includes making the change processes comprehensible

Co-funded by the Erasmus+ Programme of the European Union

and providing information that presents possible interventions as well as challenges and solutions to problems that may arise on the journey towards more entrepreneurship.

As mentioned above, different concepts of the 'entrepreneurial university' have been presented in the literature (Clark 1998; Etzkowitz 2013; Watson et al. 2011). The concepts frequently describe the very nature of such a university, but seldom reveal the change processes needed to drive the transformation towards an entrepreneurial university. Most publications address factors at the system level and how they push HEIs to change, but they hardly provide knowledge about achieving change at the work floor level.

When addressing institutional change, we find many scientific publications dealing with work-floor level processes and using a theoretical framework. However, these publications frequently address only selected aspects of the change process and do not cover all its dimensions. For example, some are about how to address the participants' (e.g., the students') motivation in becoming more entrepreneurial, and which stakeholders (e.g., teachers) to involve, or what resources (e.g., a centre of entrepreneurship; incubator facilities) and expertise (e.g., didactical approaches) are important to achieve a successful change.

Most of the studies do not address the interplay of these aspects. For institutional practitioners it would be very helpful to learn about this interplay to understand what needs to be considered when planning an institutional transformation towards entrepreneurship. In addition, frequently practitioners from HEIs often evaluate the academic research on entrepreneurship as too abstract and theoretical, and therefore not matching their concrete challenges and demands for managerial support.

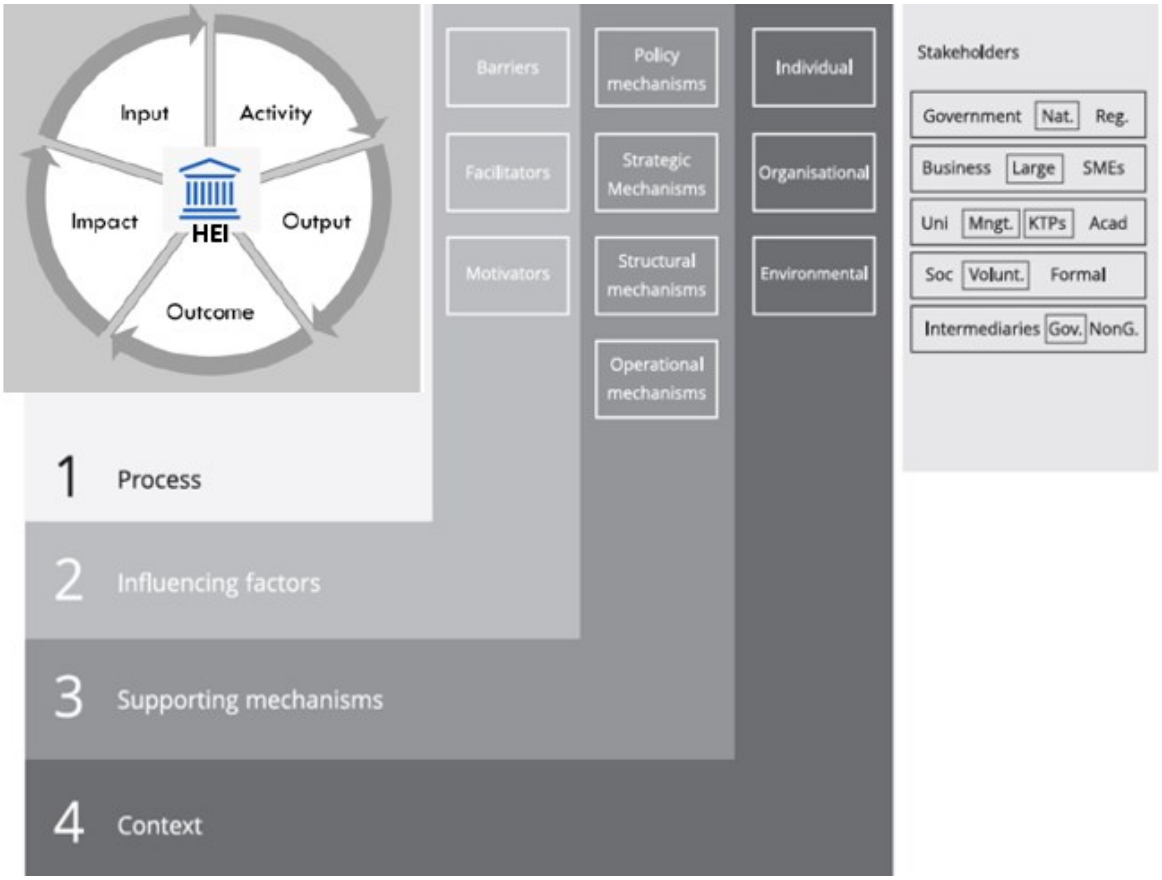
Against this background, participants in the BeyondScale project were in need of a more generic framework to better understand transformation processes in their HEIs. Besides covering the different dimensions of change, such a generic framework should not be based on a sophisticated theoretical approach but set out some key relationships between interventions and outcomes. It should identify the factors that affect this relationship. The framework should therefore generate advice to support management decisions.

The university-business collaboration model of Davey et al. (2018) matches best with all these requirements. The framework (see Figure 2) works with broad generic categories that cover the basic elements and dimensions of institutional change processes. Due to its general character, it does not only help understand university-business collaborations but also can be used for analysing other challenges around implementing the entrepreneurial agenda in HEIs.

Central to the analytical framework is the *process* dimension, which relates to the change process. This process is operationalised as a simple activity chain. It distinguishes between inputs, activities, outputs, outcomes and impact. The process can be regarded as a cycle, because organisational change is usually not just a sequence of different activities, but often its actual outcome and impact leads to further action in the institution. This dynamic process is embedded in three further dimensions (or layers) as shown in Figure 2: the *influencing factors* at the second level, the *supporting mechanisms* on the third level, and the *context* - on the fourth level.

Co-funded by the Erasmus+ Programme of the European Union

Figure 2: Analytical Framework



Source: Davey, T. et al. (2018): The state of university-business cooperation in Europe. Final report. Luxembourg: Publication s Office of the European Union, p. 26.

The second layer of influencing factors signifies the immediate environment in which the process takes place. At this level, various barriers, facilitators, and motivators influence the activity chain and pull it in one or the other direction. The (third) level of supporting mechanisms relates to the institution's enabling environment that includes the policies that frame rather than directly influence the steps in the change process. Finally, the fourth layer stands for the wider context in which the process is situated. It includes factors that are not under the institution's direct control, such as the individual characteristics and preferences of the actors involved or circumstances in its socio-economic environment of the HEI. In addition, the framework also looks at different sorts of stakeholders that can have a role in the change process. Stakeholders are linked to very different organisations in the institution's environment, say its ecosystem.

This analytical framework can guide institutional change management in planning their activities when implementing entrepreneurial interventions. The terms and categories of the framework can be used to collect targeted information and to gain clarity about further requirements related to the implementation of interventions.

Co-funded by the Erasmus+ Programme of the European Union

For example, when planning to integrate the training of entrepreneurial skills in selected curricula, the framework can support to identify inputs and steps that may not be among the things or influencing factors that immediately come into view. The framework also supports higher education institutions to include perceptions and demands of internal and external stakeholders.

2. How to select appropriate actions and activities

One of the major challenges the project partners in the BeyondScale project faced was developing an action plan after identifying the areas in which they wanted to engage. In this respect, the project partner mentioned four issues they had to address:

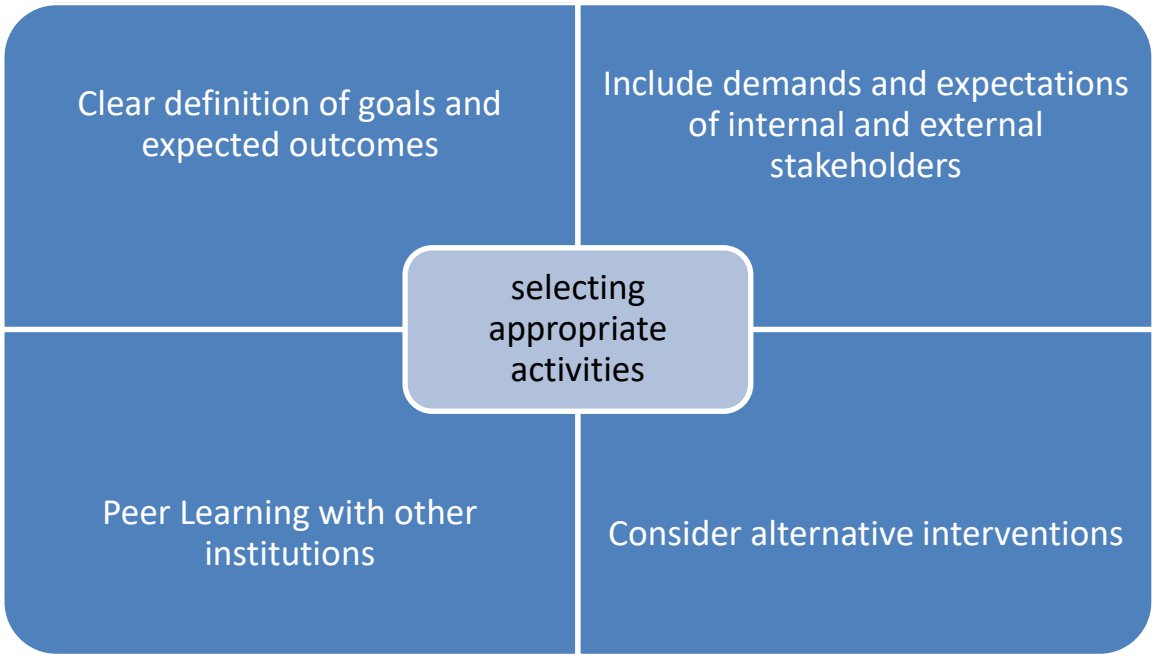
- Though having collected a lot of information, e.g., in a HEInnovate self-assessment, reading case studies and other scientific literature, some partners were still unclear about which measures to select as part of their activity. Various aspects determined these uncertainties, particularly because the partners had difficulty in assessing whether the selected measures would produce the desired effects.
- Also, it turned out that planning and scheduling the steps was difficult for complex measures and interventions.
- Some partners were concerned that they would not be able to motivate internal and external stakeholders to work on or participate in the activity in the long term.
- Finally, partners wanted to ensure that they selected achievable goals.

These challenges point out that collecting information is a good start to support change management in higher education institutions. Higher education institutions need capabilities to make sense of the information and distinguish which information is relevant.

We concluded four principles to inform change management that aims to implement entrepreneurship to address these challenges. These principles are based on the experiences of the BeyondScale partners and apply to both inbound and outbound activities.

Co-funded by the Erasmus+ Programme of the European Union

Figure 3: How to select appropriate activities



Source: developed by authors

2.1. Clear definition of goals and expected outcomes

Perhaps this principle is a matter of course for many institutional managers that needs no special mention. However, in our cooperation with the BeyondScale partners, we have noticed that many actors find it difficult to define which goals and, above all, which impacts they want to achieve with the planned activities. Often the project plans were not based on an analysis of the university's situation, i.e. no cause or even a problem was named that should be addressed by the planned activity. Change processes in higher education institutions do not always have to be triggered by causes or even problems. To determine the desired effect to be achieved by the change, it is important to reflect on the activity's motivation.

Being clear about the motivation, problem, and project's desired impact helps to better and more easily determine the goal of the activity, the means and resources to be used, and the necessary cooperation partners.

In other words, good planning of the activity in terms of objectives, feasibility and opportunities for cooperation with stakeholders can help to reduce uncertainties in selecting activities.

The following questions can guide the planning of a project:[1]

[1] Detailed information and institutional practices in addressing these questions are available in the brochure: Supporting Entrepreneurial Change Process in Higher Education: Lessons from HEInnovate and BeyondScale.

Co-funded by the Erasmus+ Programme of the European Union

1. Why do we want to do this project?

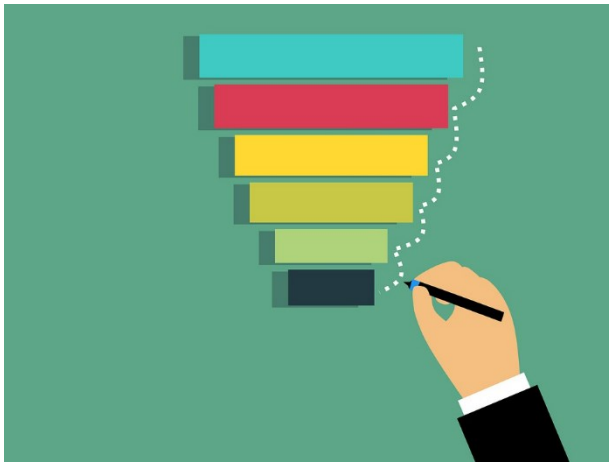
2. What are realistic project goal?

3. Who are the relevant stakeholders? How can stakeholders be involved in the project?

4. What impact should the project achieve? Can we measure the impact?

5. What is the scope of the project – shall it be a pilot project or involve the whole of the institution?

6. What resources are available and what is the timeframe for the project?



2.2 Include demands and expectations of internal and external stakeholders

The support of internal and external stakeholders is crucial for the success of the change project. Attempts to implement change activities that do not consider these demands and expectations are more likely to fail.

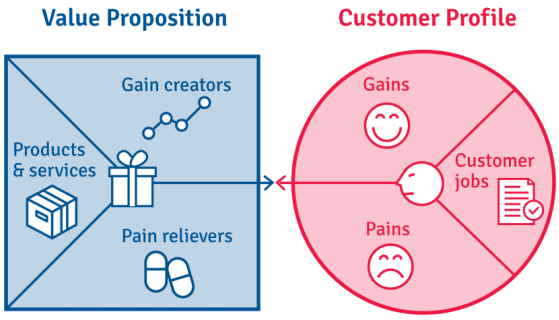
Internal and external stakeholders might refuse their support, particularly when the planned activity's goals do not match well with their goals or values or when the costs of engaging in the activity exceed the expected benefits.

Therefore, when planning a change, stakeholders' consultation to learn about their demands and expectations reveals important information to select and design appropriate activities.

In the Beyond Scale project, an adaptation of the Value Proposition Canvas was developed and tested. This tool allows a structured consultation with internal and external stakeholders. Most of the BeyondScale partners used the Value Proposition Canvas in a workshop in which selected internal and external stakeholders were invited.

The discussion format provides stakeholders (the customers) with opportunities to state their experiences with the higher education institution's performance and services. Here they can voice their critique(pains) and their satisfaction with these (gains) and point to further services they would expect from the higher education institution.

On the other hand, the higher education institution has the opportunity to describe its products and services in more detail, make suggestions how it can enhance services (pain relievers), and what benefits are related to the services (gain creators).



Value Proposition Canvas – In the BeyondScale project the canvas was adapted for consultations with stakeholders. Information on the implementation of the VPC is provided on https://www.beyondscale.eu/result-repository/user-stories-tutorial/. where a video tutorial and user-stories of the BeyondScale partners are provided.

The BeyondScale partners perceived the Value Proposition Canvas as a helpful tool to learn about their stakeholders' demands and expectations. However, when using the tool, they suggest:

- To define the area of collaboration clearly. Discussing the services and performance of the higher education institution, in general, does not achieve very fruitful outcomes. Limiting the discussion to a selected activity, e.g., facilitating student internships or small research projects by students in companies, helps higher education institutions collect relevant information.
- Select a small group of stakeholders. Besides already known stakeholders, consider inviting new ones.
- To be well prepared for the event/the consultation. For the preparation of the event, the BeyondScale partners collected information from their stakeholders through a survey or in bilateral talks. This helped them to get insights and prepare suggestions already before the event.

2.3 Peer Learning with other higher education institutions

Besides including stakeholders, exchanging and learning with other higher education institutions can help select appropriate actions. In the BeyondScale project, a Buddy-System was established. Here BeyondScale Partners consulted each other on their planned activities, some partners also developed their activities together.

Peer Learning, however, can take various forms and ranges from exchanging information to developing projects in collaboration. It is difficult for some higher education institutions to find other institutions from which or with whom they would like to cooperate. For example, higher education institutions searching for good practices often look for them at successful universities

Co-funded by the Erasmus+ Programme of the European Union

and try to mimic these. This approach suits some higher education institutions, particularly those similar to these institutions as the good practices match their capabilities and resources in a better way. For institutions with a different profile than the successful institution, this approach might be less suitable as the practice could go beyond their capacities and resources.

Finding the right 'buddy' to learn with or from is thus a challenge for higher education institutions. They need to make choices and consider if they prefer to collaborate with institutions that face similar challenges and plans or if they would like to team up with institutions with a strongly different profile.

The BeyondScale project implemented a so-called Buddy System to facilitate peer-learning. Most institutions decided to collaborate with partners that worked on similar challenges or planned to implement similar interventions. In one case, two BeyondScale partners worked together in developing their plan, but foremost, partners exchanged information on their activities or participated in meetings with stakeholders or other events. The majority of BeyondScale partners found this exchange helpful for shaping their activities and highlighted that its contribution was not decisive.

DigiBuddy Nevertheless, collaboration with other universities is often an asset and a learning experience for all involved. To support the search for universities interested in collaborating in the field of entrepreneurial universities, the BeyondScale project has created a digital platform (www.digi-buddy.eu). The platform makes it possible to find universities interested in collaboration through matching. The matching aims to bring partners with the same interests or profiles into contact with each other.

2.4 Consider alternative interventions

As with any other challenge, it can help implement entrepreneurship to look at different interventions and then decide which one is the most appropriate for your university.

Finding alternative interventions can also be difficult: On the one hand, there are many interventions presented in academic publications or the grey literature. On the other hand, researching and evaluating alternatives can be too time-consuming and costly for a higher education institution.

The HEInnovate website offers a way to support the search for suitable interventions with its "resources" section (https://www.heinnovate.eu/en/heinnovate-resources). Here users can find case studies, user stories or guidance notes they can use to plan their activities. A corresponding menu is available for a targeted search.

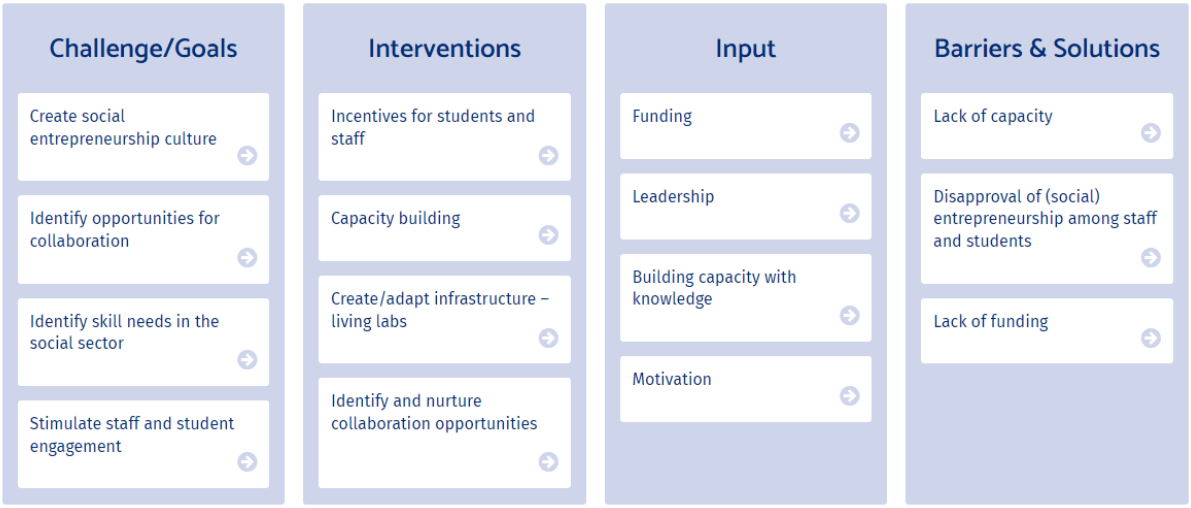
In addition, the Beyond-Scale Project has developed the so-called Inspiration Fiches, a tool that provides users with a quick introduction to various aspects of entrepreneurial change processes. The Inspiration Fiches were developed in the project for the topics "Implementation of entrepreneurial teaching and learning" and "Social Entrepreneurship". They are based on a systematic literature review of scientific publications on both topics and condense their contents concerning four questions:

Co-funded by the Erasmus+ Programme of the European Union

- What challenges do higher education institutions face when they want to become active in "implementation of entrepreneurial teaching and learning" or "social entrepreneurship"?
- What interventions are typically undertaken for this purpose?
- What inputs or resources need to be brought in to implement the interventions and achieve goals?
- What problems or barriers are reported for implementing interventions, and how were these typically solved or dealt with by the HEIs?

The inspiration fiches that the BeyondScale project has developed present important measures and institutional interventions that respond to these questions (see figure 4). Users can click on the keyword and be directed to a page with further information and specific resources. The inspiration fiches are designed to help higher education institutions quickly find basic information, get inspired and have entry points to continue their search for further information.

Figure 4: Inspiration fiche "Social Entrepreneurship"



Source: www.digi-buddy.eu – Inspiration fiche available only after registration on the platform

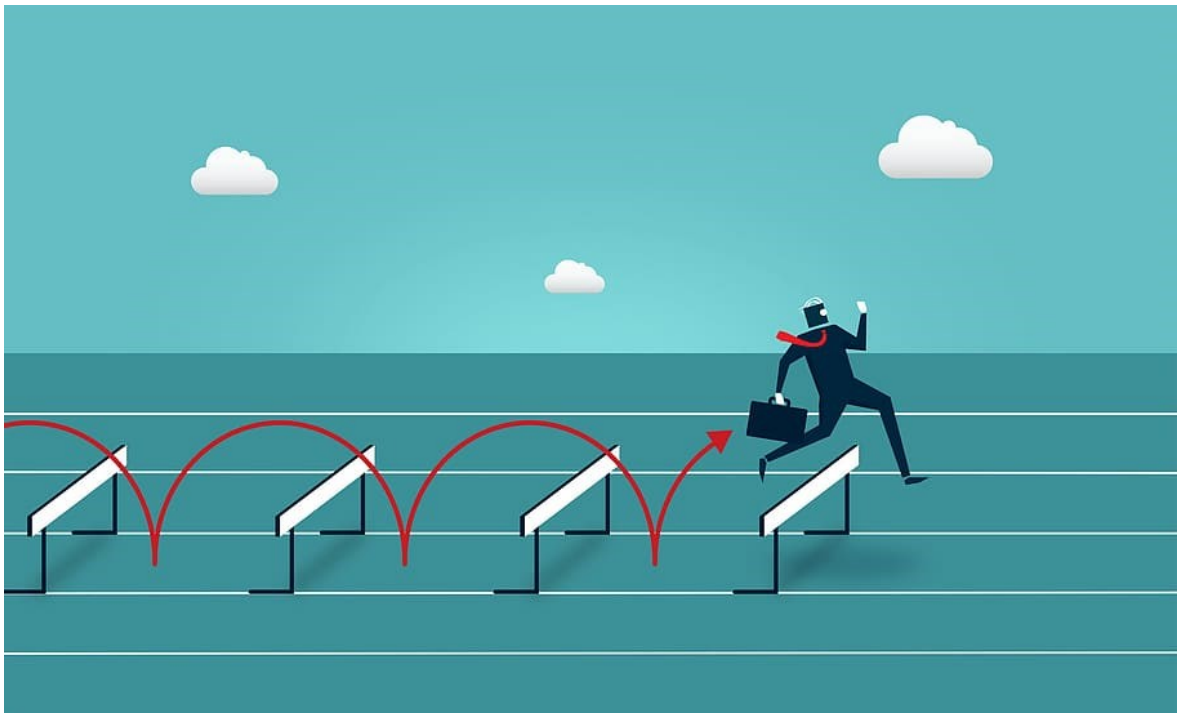
3. Barriers and Solutions

This section will address barriers that typically confront activities and interventions to implement the entrepreneurial agenda in higher education institutions. These barriers will be presented along the lines of the specific characteristics of an entrepreneurial university we presented in the first section. Thus, we will address typical barriers that could impede entrepreneurial change in the areas of:

- Institutional entrepreneurial culture,
- Diversifying the funding base,
- Stimulating the academic heartland,
- Leadership and institutional management, and

Co-funded by the Erasmus+ Programme of the European Union

- Collaborating with stakeholders from an expanded periphery.

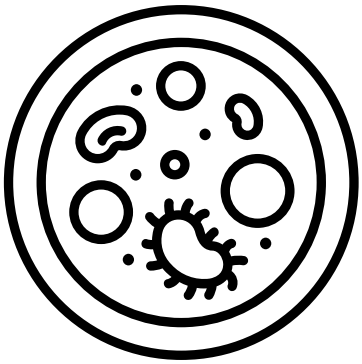


3.1 Barriers to developing an entrepreneurial culture

Entrepreneurial values challenge traditional academic values as some legitimate practices that might be at odds with widely accepted academic practices in teaching and learning. These challenging aspects include:

- The high value assigned to opening research and education more towards society, i.e., contributing to social change, collaborating with the business and industry sector, or taking a role in regional development. In some academic disciplines, this demand is still contradictory to their classical understanding of what research can do for society: observing and reflecting on societal trends without interfering with these 'natural' developments or changes. Also, in some disciplines, there is disapproval for collaboration with the business and industry sector as this could limit academic freedom or the objectivity of research.
- The creation of (social) value. In some disciplines the creation of (social) value or valorisation activities are found to be alien concepts for the academic task portfolio.

Co-funded by the Erasmus+ Programme of the European Union



These challenges can lead to a situation where academic staff do not accept entrepreneurial values, and their integration in the institutional culture fails, or they become only relevant in some parts of the higher education institution, e.g., in disciplines in which entrepreneurial values can be more easily integrated. A lack of acceptance could lead to motivation problems among staff and students and to the emergence of a dual structure in which entrepreneurial activities are not well integrated into education and research. A lack of entrepreneurial culture can have a negative impact on the motivation of staff and the entrepreneurial intentions of students.

Especially for teaching staff, the objectives and values of entrepreneurship education must fit well with their professional values. Sometimes institutional requirements to integrate entrepreneurship training into the teaching are not well accepted by staff, in particular when there is a mismatch between the teachers' perceptions of what skills should be built and the entrepreneurial skill sets defined in the institutional requirements. This mismatch can result in teachers who only superficially address entrepreneurship.

Students who perceive institutional regulations, values and support negatively often refrain from their entrepreneurial intentions, i.e., they less frequently transform their ideas into a business start-up or do not develop an entrepreneurial attitude.

Communication is key to achieving a shared entrepreneurial culture. Studies point out that defining and communicating the value of entrepreneurship training is fundamental. As for any organisational change, the involvement and support of leadership are crucial to creating commitment among staff and students (Bin Yusoff, Mohd Nor Hakimin et al., 2015). However, as higher education institutions frequently host several disciplinary cultures, institutional leadership needs to address these cultural differences in a sensitive manner. Describing entrepreneurial skills should avoid being dominated by one discipline. Rather institutional definitions should be either general or diversified to accommodate the cultural diversity. The involvement of the staff when defining entrepreneurial values also helps to secure their support (Clements, 2012). Concerning the students and further users of entrepreneurship training, such as business partners in the regions. A few papers report that the design of entrepreneurship curricula must also consider their demands to stimulate their interest (Mets et al., 2017).

Incentives can stimulate the motivation and intentions of teachers and students. Time and financial incentives can be helpful, but also the opportunity to have new experiences turned out to be a strong motivator. Interventions that gave teachers and students who were new to entrepreneurship training the opportunity to learn about it and continue in this area were very effective. Here, it is argued that the newness of the knowledge, experiences and contacts made is the incentive (Ghina et al., 2014; Mkimurto-Koivumaa & Belt, 2016; Thom, 2017).

Finally, ***training teachers for entrepreneurial education*** can ease their uncertainties and feelings of insufficient preparation. The provision of training can be beneficial when it includes new or

Co-funded by the Erasmus+ Programme of the European Union

innovative teaching practices or the opportunity to collaborate with other teachers (Terzaroli, 2019).

The above-mentioned differences in perception of the role of science and scientific knowledge in societies challenge academic staff to reflect on their attitudes and values about valorising their work. In some cases, this can cause resistance against (social) entrepreneurship when the concept is misunderstood with regard to value creation and contributing to social change. Also, the propagation of (social) entrepreneurship as an additional task to the academic portfolio can create disapproval among academic staff when individual benefits of engagement are not communicated well.

While most students have a positive attitude towards (social) entrepreneurship, some are reluctant to engage in it as they see it as an additional burden that or task that will not add to their skills profile or delay their graduation. ***Awareness building is a major remedy*** to clarify on misunderstandings of the concept of social entrepreneurship. Dissemination of good practice examples and including staff in the development of social entrepreneurship strategy as active participants. Awareness building should consider the various concepts of social entrepreneurship that are currently available (Paunescu et al 2013). Awareness building among students can point to the special skill set they can gain from participating in service learning or collaborative research projects with the social sector or internships in the business and industry sector.

3.2 Barriers to diversifying the funding base

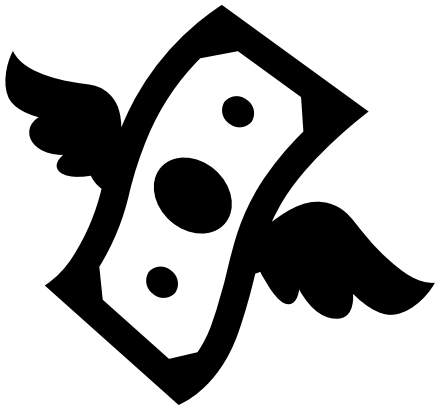
Sufficient and continuous funding is indispensable for embedding entrepreneurial activities in education and research with a long-term perspective. To secure funding, higher education institutions need to diversify their income streams and identify new money streams, e.g., through stronger collaboration with the business sector or establishing fundraising.

Besides a general scarcity of funding in general, when it comes to entrepreneurship activities, higher education institutions frequently must address the following barriers:

- Funding from (research) foundation or other donors is mostly ***limited to a project that runs for a certain period of time.*** Once the project is completed, also funds run out while the higher education institution does not find other funding sources to continue with the project or does not integrate the practices in its processes and structures.
- For some higher education institutions, it is also difficult to demonstrate ***the outcomes or impact of their entrepreneurial engagement*** to potential funders and donors. The lack of information on the return of investment discourages potential funders from providing resources and collaboration.
- Finally, some higher education institutions ***lack the capacity and knowledge to engage in fundraising***. Frequently, this task is put on the shoulders of academic staff who need to acquire money for their research from third parties or find other resources in their environments.

Co-funded by the Erasmus+ Programme of the European Union

Several solutions to remedy the lack of funding are available. Not all of these solutions aim at increasing income but try to generate other resources or advertise the outcomes of social entrepreneurship.



Diversifying income resources: Higher education institutions can engage in uncovering further income resources. Connective leadership, i.e., the engagement of institutional leaders with (private) donors and foundations, is an option. Further, ***investing non-financial resources***: Besides money, the volunteering of staff and students represents a resource that is relevant in establishing collaborations, in particular with the social sector. However, incentives to motivate staff and students to provide their voluntary engagement to the higher education institution have to be in place.

Adapting/establishing an indicator system to monitor/report (social) impact: Information on the (social) impact of the institution's community engagement can be helpful to demonstrate its value and engage further donors, charities, and public bodies to provide resources for this work (Roslan et al 2020, p. 9; Benneworth and Jongbloed 2013). Also, the ***targeted dissemination of social engagement achievements or of collaboration with the business and industry sector*** creates greater public interest. Higher education institutions are more likely to become recognised as relevant actors who contribute to regional development.

Awareness building in the business and industry sector and social sector organisations. Some external stakeholder organisations are reluctant to collaborate with higher education institutions as they believe that they cannot afford their services. Awareness building campaigns should point out the actual costs and benefits of collaboration. Further, higher education institutions should consider ***adapting their tariffs*** to the financial possibilities of their stakeholders. ***Sharing facilities and infrastructure with external stakeholders.*** Sharing facilities with regional stakeholders represents a further possibility to lower the costs of collaboration.

3.3 Barriers to stimulating the academic heartland

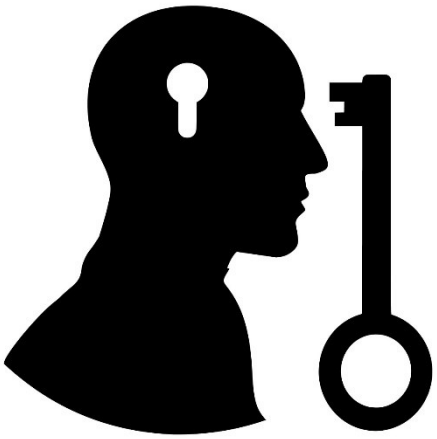
A major challenge when stimulating the academic heartland is to convince staff and students about the added value of entrepreneurial activities. Therefore, to the extent possible, these need to ***link*** to their ***intentions and motivations***. Interventions that block their motivation or that do not link to their intentions are more likely to fail. Also, a ***lack of entrepreneurial knowledge and capacity among academic staff*** is a barrier to their engagement.

Research results have already pointed out that ***defining and communicating the value of entrepreneurship training is fundamental to securing the motivation of (***academic) staff. As for any organisational change, the involvement and support of leadership are crucial to creating commitment among staff and students (Bin Yusoff, Mohd Nor Hakimin et al., 2015). However, as higher education institutions frequently host several disciplines, institutional leadership needs to address these differences in a sensitive manner. Describing entrepreneurial skills should avoid

Co-funded by the Erasmus+ Programme of the European Union

being dominated by one discipline. Rather institutional definitions should be either general or diversified to accommodate the disciplinary diversity. The involvement of the staff when defining entrepreneurial values also helps to secure their support (Clements, 2012). Concerning the students and further users of entrepreneurship training, such as business partners in the regions. A few papers report that the design of entrepreneurship curricula must also consider their demands to stimulate their interest (Mets et al., 2017).

Concerning the motivations of teaching staff (and students), studies investigated a few incentives. While the ***provisions of time and financial incentives*** can be helpful, it turned out ***that making new experiences is a strong motivator in the research***. Interventions that gave teachers and students new to entrepreneurship training the opportunity to learn about it and continue in this area were very effective. Here, it is argued that the newness of the knowledge, experiences and contacts made is the incentive (Ghina et al., 2014; Mkimurto-Koivumaa & Belt, 2016; Thom, 2017). However, we would like to note that this incentive might preferably unfold in well-organised learning opportunities. Some studies also point out that teachers sometimes are not well prepared for teaching entrepreneurial skills. The provision of training can be beneficial for those teachers, especially when it includes new or innovative teaching practices or the opportunity to collaborate with other teachers (Terzaroli, 2019)



Also, students' entrepreneurial intentions are an important variable for the design of entrepreneurial activities at a higher education institution. Some students have already developed ideas about starting their own company before attending an entrepreneurial course or seeking institutional support for their plans. The design of entrepreneurial teaching, however, includes besides programmes or modules on entrepreneurship also, regulations, culture and the provision of information. Students who perceive the different aspects of the entrepreneurial teaching and learning design, the more likely it is that their entrepreneurial intentions will realise as action, e.g., as founding a start-up business. Considering students' intentions in the design of entrepreneurial teaching and learning is a must for higher education institutions. ***Cultures, regulations or information that is found to be unclear, too bureaucratic or irrelevant*** will hinder students from venturing into their own businesses or developing an entrepreneurial mindset.

To better connect to students' entrepreneurial intentions, higher education institutions can – besides surveying these intentions – create a climate for entrepreneurship that support students' intentions. Oftedal et al. (2017) mention ***the creation of a positive entrepreneurial culture, including the establishment of a positive image of the entrepreneur, media campaigns on entrepreneurship, including events and business plan competitions, can also be helpful***. Encouraging students with concrete plans and also clear regulations for financial support for start-up companies are further instruments to connect to students' intentions.

Interventions that create entrepreneurial knowledge and capacity among academic staff are further stimuli for the academic heartland. When discussing interventions for entrepreneurial

Co-funded by the Erasmus+ Programme of the European Union

teaching and learning, these are mostly interventions that create benefits or skills for students. Interventions for teachers, in particular, training teachers for entrepreneurship education, are less often addressed.

However, teachers and their qualifications are crucial for entrepreneurship education. Several studies report that when higher education institutions started to implement entrepreneurship education, academic teachers criticised that they did not have sufficient knowledge about it or lacked entrepreneurial skills themselves. To some, this situation hindered sufficient engagement.

Interventions for teacher training aim at creating teaching skills in teachers that enable them to engage in entrepreneurial teaching. These skills are thus more than just entrepreneurial knowledge but include skills to teach entrepreneurship, liaise with the (regional) business sectors and support students in becoming entrepreneurs.

Interventions that aim at teachers can include measures to train teaching staff regards entrepreneurship competencies in their disciplinary area. This training can include a twofold approach: first, it can create the teachers' entrepreneurship competencies and second, it refers to enhancing their skills in integrating entrepreneurial training in their teaching. Studies on teacher training reveal that these interventions appear to be more self-initiated by staff rather than an intervention planned by the institution (Murray, 2019; Thom, 2017). However, interventions that aim to train teaching staff often happen as informal learning (for example, in peer learning or professional learning communities) as well as – though less frequently – as formal learning (for example, in (mandatory) didactical courses for young teachers (Terzaroli, 2019). To date, there a no instruments that measure entrepreneurial competencies in teachers.

To mobilise this knowledge, higher education institutions can employ different instruments. However, in the literature, knowledge mobilisation is hardly addressed as an intervention that can support capacity building for social entrepreneurship in a higher education institution. However, research on other professional organisations, such as health care organisations, pointed out that mobilising knowledge from staff should consider the following (Kislov, Waterman and Boaden 2014)

- Rather than building capacity, the process should be understood as developing capacity
- Involving staff as active participants who contribute to a collaborative project rather than treating them as passive recipients of established instruments secure high acceptance of new strategies and processes
- Besides mechanism to explore the tacit and explicit knowledge of staff, institutions should exploit this knowledge and upscale it/disseminate it across the whole organisation (see also Kolster 2021)
- Collective learning should complement individual learning.

3.4 Barriers to a strengthened steering core

In the original conception, "strengthening the steering core" referred to interventions that implemented managerial steering in higher education institutions due to their increasing autonomy. Professionalising the governance and management of higher education is no longer a major problem. With regard to entrepreneurship, however, the question arises as to what form of leadership can help to embed it in higher education institutions.

Co-funded by the Erasmus+ Programme of the European Union

Research states that management and leadership styles are key to implementing community engagement or (social) entrepreneurship in higher education institutions. Hazelkorn (2016) suggests that institutional governance structures could include leadership positions for the specific tasks or that the tasks portfolio of these positions should be amended by these tasks. In any case, leadership support is seen as a major input for fostering (social) entrepreneurship in higher education institutions as it signifies its relevance and indicates support to students and staff engaging in these areas.

The engagement of leadership for (social) entrepreneurship is relevant as

- it ***contributes to creating a culture*** of (social) entrepreneurship and community engagement in higher education institutions.
- Leaders who engage in these areas provide strong good practice examples that can stimulate staff and students to also engage in these activities.
- Leaders ***supporting engagement*** strengthen its relevance and increase its legitimacy.
- Engaged leaders ***can mobilise funds and further resources*** from internal and external stakeholders and donors.

The literature provides several models of leadership for (social) entrepreneurship:

Embedded leadership (Powell and Dayson 2013): This model zooms in on the internal processes of higher education institutions. Central to the concept is the creation of middle management roles (such as associate deans at the faculty level) who are commissioned with specific tasks to promote (social) entrepreneurship and (social) engagement.
The task includes:

- Sharing, refining, and embedding the general vision of (social) entrepreneurship/community engagement in the institution
- Spreading knowledge and ideas around the topic
- Support academic staff implementing entrepreneurship in their research and education and serve as problem solvers

Connective leadership (Reichert 2019): This model points to managers from the top level of the higher education institutions engaging or collaborating actively with regional stakeholders. Their activities are strong good practice exemplars for internal stakeholders as well as regional, and external stakeholders who are interested in collaborating/innovating with the higher education institution.

Distributed leadership (Cannatelli et al 2017): In distributed leadership models, leadership is defined by performed tasks and not by position. Thus, any person who engages in (social) entrepreneurship in an institution can serve as a leader in this area. However, institutions must be able to identify these persons and support them in collaborating with others and exploiting their expertise.

Cultural leadership (Muralidharan and Pathak 2019): Cultural leadership finally focuses on how staff evaluates the (social) entrepreneurship behaviour of leaders against their (cultural)

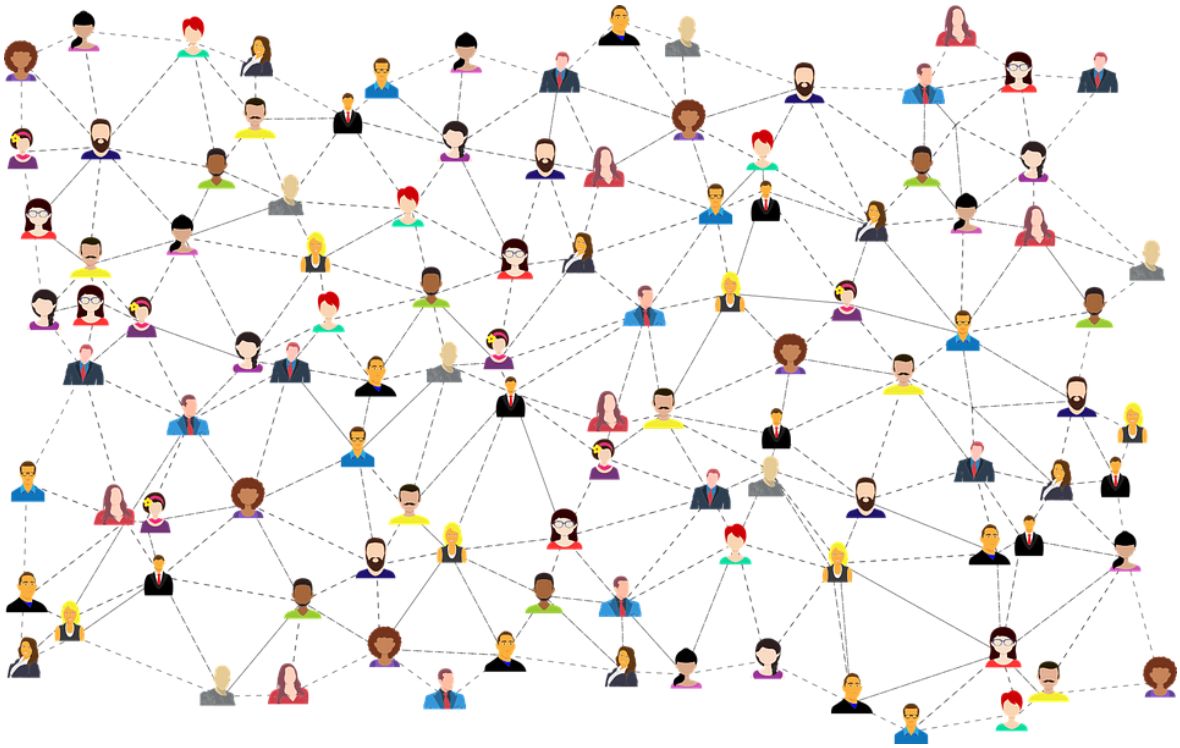
Co-funded by the Erasmus+ Programme of the European Union

stereotypes of good (social) entrepreneurship behaviour. Positive evaluations might stimulate a similar behaviour. However, management interventions could relate to these stereotypes to stimulate copying behaviour and wider acceptance of (social) entrepreneurship activities.

3.5 Barriers to establishing an expanded developmental periphery

Research shows that higher education institutions with no external ecosystems or only very few of these networks face problems in achieving good outcomes of entrepreneurial teaching and learning and collaborating with the regional environment. Having an external and internal entrepreneurial ecosystem is a crucial factor for implementing and strengthening entrepreneurial teaching and learning (Lackus & Williams Middleton, 2015) and contributing to regional development.

The lack of external networks often results in a lack of knowledge about what potential employers need as entrepreneurial skills. Further, these institutions are less able to provide their students with internships or collaborative education. It is also more difficult to attract guest teachers with professional experience or provide students and graduates who want to start their own businesses with contacts in these sectors. The lack of these networks might thus diminish the entrepreneurial learning outcomes for students and their later careers.



Davey et al. (2018) mention as major barriers to university-business collaboration the bureaucracy of higher education institutions, a lack of sufficient work time on the side of academic staff, cultural differences between the higher education institutions as well as differences in motivation when it comes to the perceived benefit of collaboration.

Consultations with key stakeholders and regional partners to learn about their perceptions of the higher education institution's performance and their demands through (value proposition) workshops (see section 2) can be a helpful tool here. Selected statements of the HEInnovate self-

Co-funded by the Erasmus+ Programme of the European Union

assessment tool (dimension "knowledge transfer and exchange") present a helpful stimulus to kick off these consultations. The challenge related to identifying opportunities for collaboration for universities lies in finding opportunities that match the university's engagement mission and capacity. Depending on their institutional profile, HEIs that are more engaged in education will contribute stronger to the regional development when educating graduates with transdisciplinary skills for solving wicked problems. Higher education institutions with a strong research record will be more likely to support social change with technical solutions and social innovations. Selecting opportunities to which higher education institutions can contribute significantly will secure the support of external stakeholders in the long run.

The successful identification of collaboration opportunities thus depends on a clear institutional awareness of its strengths and weaknesses and demands and needs for regional development and stakeholders from the (regional) social sector.

When doing so, institutions can determine if their current networks and efforts to nurture and maintain them are sufficient for their plans or if they eventually need to be extended. Compiling an inventory of existing contacts, including contacts of staff, can also provide insights. Some institutions also report that they have established professional roles and specialised departments such as knowledge transfer offices and centres for entrepreneurship that maintain these networks and aim to extend them. Thus, investing in the creation of inhouse capacity will embed the institutions in their regions (Clements, 2012; Fenton & Barry, 2011; Williams & Fenton, 2013).

However, Davey et al (2018) also point out that removing barriers, e.g., cutting red tape or providing more time and funds, is a good start. However, the authors also suggest that common goals and interests of the higher education institutions and the industry and business sector are important motivators to establish longer-term collaboration. Also, building trust in university-business collaborations sustains these relationships. Higher education institutions can encourage professional staff mobility with small funds, and these exchanges help staff from both sides help to create a mutual understanding and develop shared interests.

Other interventions that can support higher education institutions to expand their developmental periphery or ecosystem are the establishment of open innovation models and engagement in co-creation activities. In essence, open innovation models refer to opening innovation processes to external communities and including them in the development of social innovations. Living labs can provide space for exchanging and collaborating with relevant stakeholder groups. Connective leadership: The term connective leadership refers to leaders who are well embedded in regional networks and have agile/vivid relationships with the social sector. Case studies have shown rectors or presidents of higher education institutions who actively engage with the social sector can bring about major contributions to regional (social) innovations and strengthen the institution's relationship with the sector (Reichert 2019, p. 67ff)

Co-funded by the Erasmus+ Programme of the European Union

4. Guidelines in a nutshell

Updating knowledge or becoming aware of the "entrepreneurial university" concept is a good start before selecting and implementing change actions.

Tell me what you want.

When developing change projects, consulting and collaborating with internal and external stakeholders helps shape and select more targeted activities.

Small is beautiful.

The integration of entrepreneurship can be done stepwise with small projects.

Culture matters.

Investing in entrepreneurial mindsets of academic staff and students supports the acceptance of entrepreneurship.

Measure the impact of entrepreneurial activities and disseminate results to selected audiences.

Create Win-Win situations. Entrepreneurial engagement is less frequently perceived as a burden and alien element when staff and students can recognise individual benefits linked to engagement.

Walk the talk.

Leaders who engage in entrepreneurship and establish collaborations opportunities will create legitimacy for entrepreneurial action.

It takes two to tango.

Common interests and goals facilitate well-functioning collaboration with the regional environment.

References

Bin Yusoff, Mohd Nor Hakimin; Zainol, Fakhrul Anwar; Bin Ibrahim, Mohamed Dahlan (2015): Entrepreneurship Education in Malaysia's Public Institutions of Higher Learning--A Review of the Current Practices. In *International Education Studies* 8, pp. 17–28.

Cannatelli, Benedetto; Smith, Brett; Giudici, Alessandro; Jones, Jessica; Conger, Michael (2017): An Expanded Model of Distributed Leadership in Organizational Knowledge Creation. In *Long Range Planning* 50 (5), pp. 582–602. DOI: 10.1016/j.lrp.2016.10.002.

Cerver Romero, Elvira; Ferreira, João J. M.; Fernandes, Cristina I. (2021): The multiple faces of the entrepreneurial university: a review of the prevailing theoretical approaches. In *J Technol Transf* 46 (4), pp. 1173–1195. DOI: 10.1007/s10961-020-09815-4.

Clark, Burton R. (1998): Creating entrepreneurial universities. Organizational pathways of transformation. Bingley: Emerald (Issues in higher education).

Clements, Mike (2012): Contribution of the SPEED Programme to the Enhancement of an Enterprise Culture in a UK University. In *Industry and Higher Education* 26, pp. 101–106. DOI: 10.5367/ihe.2012.0088.

Dahlan, Ahmad; Ibrahim, Jamaludin; Jalaldeen, Mohamed; Mohajir, Mohammed (2020): Redesign "University of the Future" Conceptual Business Model: Sustainability and Staying Relevant in the Digital Age. In Journal of Information Systems and Digital Technologies 2 (1), pp. 47–59, checked on 4/20/2021.

Etzkowitz, Henry (2013): Anatomy of the entrepreneurial university. In *Social Science Information* 52 (3), pp. 486–511. DOI: 10.1177/0539018413485832.

Fenton, Mary; Barry, Almar (2011): The Efficacy of Entrepreneurship Education: Perspectives of Irish Graduate Entrepreneurs. In *Industry and Higher Education* 25, pp. 451–460. DOI: 10.5367/ihe.2011.0069.

Ghina, Astri; Simatupang, Togar M.; Gustomo, Aurik (2014): A Systematic Framework for Entrepreneurship Education within a University Context. In *International Education Studies* 7.

Guerrero-Cano, Maribel; Kirby, David; Urbano, David (2006): A Literature Review on Entrepreneurial Universities: An Institutional Approach. Available online at www.researchgate.net/publication/228657319, checked on 2/24/2022.

Kolster, Renze (2021): Structural ambidexterity in higher education: excellence education as a testing ground for educational innovations. In *European Journal of Higher Education* 11 (1), pp. 64–81. DOI: 10.1080/21568235.2020.1850312.

McClure, Kevin R. (2016): Building the Innovative and Entrepreneurial University: An Institutional Case Study of Administrative Academic Capitalism. In *The Journal of Higher Education* 87 (4), pp. 516–543. DOI: 10.1080/00221546.2016.11777412.

Mets, Tnis; Kozlinska, Inna; Raudsaar, Mervi (2017): Patterns in Entrepreneurial Competences as the Perceived Learning Outcomes of Entrepreneurship Education: The Case of Estonian HEIs. In *Industry and Higher Education* 31, pp. 23–33. DOI: 10.1177/0950422216684061.

Co-funded by the Erasmus+ Programme of the European Union

Mkimurto-Koivumaa, Soili; Belt, Pekka (2016): About, for, in or through Entrepreneurship in Engineering Education. In *European Journal of Engineering Education* 41, pp. 512–529. DOI: 10.1080/03043797.2015.1095163.

Muralidharan, Etayankara; Pathak, Saurav (2019): Consequences of Cultural Leadership Styles for Social Entrepreneurship: A Theoretical Framework. In *Sustainability* 11 (4), p. 965. DOI: 10.3390/su11040965.

Murray, Alan (2019): The Role of Practical Assessment in the Delivery of Successful Enterprise Education. In *Education & Training* 61, pp. 413–431. DOI: 10.1108/ET-10-2018-0216.

Nichols, Naomi; Phipps, David J.; Provencal, Johanne; Hewitt, Allyson (2013): Knowledge Mobilization, Collaboration and Social Innovation: Leveraging Investments in Higher Education. In *Canadian Journal of Nonprofit and Social Economy Research* 4 (1), pp. 25–42.

Oftedal, Elin Merethe; Iakovleva, Tatiana A.; Foss, Lene (2018): University Context Matter: An Institutional Perspective on Entrepreneurial Intentions of Students. In *Education & Training* 60, pp. 873–890. DOI: 10.1108/ET-06-2016-0098.

Powell, James; Dayson, Karl (2013): Engagement and the Idea of the Civic University. In Paul Benneworth (Ed.): University Engagement with Socially Excluded Communities. Dordrecht: Springer Netherlands, pp. 143–162.

Pruvot, Enora Bennetot; Estermann, Thomas (2012): European Universities Diversifying Income Streams. In Adrian Curaj (Ed.): European Higher Education at the Crossroads. Between the Bologna Process and National Reforms. With assistance of Peter Scott, Lesley Wilson, Lazăr Vlasceanu. 1st ed. Dordrecht: Springer Netherlands, pp. 709–726. DOI: 10.1007/978-94-007-3937-6_38.

Reichert, Sybille (2019): The Role of Universities in Regional Innovation Ecosystems. European University Association. Brussels (EUA Study).

Terzaroli, Carlo (2019): Entrepreneurship as a Special Pathway for Employability. In *New Directions for Adult and Continuing Education* NA, pp. 121–131. DOI: 10.1002/ace.20346.

Thom, Marco (2017): The Rough Journey into Arts Entrepreneurship: Why Arts Entrepreneurship Education Is Still in Its Infancy in the UK and Germany. In *Education & Training* 59, pp. 720–739. DOI: 10.1108/ET-01-2016-0015.

Tremblay, Crystal; Hall, Budd L. (2014): Learning from community-university partnerships: A Canadian study on community impact and conditions for success. In *International Journal of Action Research* 10 (3), pp. 376–404.

Watson, David; Hollister, Robert; Stroud, Susan E.; Babcock, Elizabeth (2011): The engaged university. International perspectives on civic engagement. New York: Routledge (International Studies in Higher Education Ser).

Williams, Perri; Fenton, Mary (2013): Towards a Good Practice Model for an Entrepreneurial HEI: Perspectives of Academics, Enterprise Enablers and Graduate Entrepreneurs. In *Industry and Higher Education* 27, pp. 499–506. DOI: 10.5367/ihe.2013.0183.

Co-funded by the Erasmus+ Programme of the European Union

Disclaimer:

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Co-funded by the Erasmus+ Programme of the European Union