Supporting Entrepreneurial Change Processes in Higher Education: Lessons from HEInnovate and BeyondScale

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What this booklet is about

This book was written as part of the BeyondScale project. BeyondScale is an Erasmus+ Forward-Looking Cooperation Project in which eight higher education institutions (HEIs) collaborate to make their institutions more entrepreneurial and innovative. In doing so they improve their capacity to manage organisational change processes around embedding entrepreneurship in their research, teaching, and knowledge transfer activities. The projects undertaken by the BeyondScale partners employ two major tools for achieving this objective. First, the employment of the HEInnovate self-assessment tool and the HEInnovate resources found on the HEInnovate website (https://www.heinnovate.eu/en). Second, through establishing a so-called *Buddy System*, that facilitates peer-learning among the project partners.

This specific approach to capacity building contributes to the further objectives of the BeyondScale project: to contribute to the enhancement of the use and usefulness of the HEInnovate tool and to strengthen the collaboration among European HEIs that wish to implement an entrepreneurial agenda and initiate a process of institutional transformation towards that end.

The BeyondScale project was supported by accompanying research activities undertaken by CHEPS (the *Center for Higher Education Policy Studies*). Its main tasks were to advise the eight project partners on the design and contents of the activities undertaken as part of the entrepreneurial transformation processes, reflect with the project partners on the use of the HEInnovate tool and its methodology, and to contribute further knowledge on entrepreneurial change processes in their institutions' peer-learning activities. In the accompanying research, some general lessons were to be produced and they are presented in this booklet.

This booklet summarises the experiences of the BeyondScale project partners in applying the HEInnovate tool and methodology as developed for the project. Further, this brochure provides recommendations and guidelines for enhancing the use and usefulness of the HEInnovate tool and methodology.

Chapter 1 describes the specific approach of applying the HEInnovate tool and methodology in the BeyondScale project. The chapter also presents the HEInnovate tool as such, how the BeyondScale approach differs from the usual way of using HEInnovate, and why these changes to the approach were made.

Chapter 2 analyses the specific experiences of the project partners when engaging with the HEInnovate tool and methodology during their projects. It presents the very structured approach used by the project partners when planning and implementing their project activities and how the use of the HEInnovate tool supported these processes. It also presents some more general suggestions and guidelines for HEIs that are considering to undertake entrepreneurial change processes.

Chapter 3 reflects on the experiences of the project partners and provides some recommendations for applying the HEInnovate tool and the amendments that were designed and tested in the BeyondScale project. These amendments, based on the experiences of the BeyondScale partners, are presented as ways to improve the use and usefulness of the HEInnovate tool.

1. BeyondScale, entrepreneurial universities and HEInnovate

1.1 The BeyondScale Approach to HEInnovate

The BeyondScale project was one of the four Forward-Looking Cooperation projects of the European Commission's Erasmus+ programme that looked at the HEInnovate tool, its use and the formulation of recommendations that could contribute to its improved usability. One of the questions addressed in the project was to what extent the HEInnovate tool can support organisational change processes in higher education institutions (HEIs). These change processes initiated by the BeyondScale project partners either focused on changing internal structures (these were labelled: projects on inbound activities) or on strengthening the arrangements and interaction structures for cooperation with external stakeholders (i.e. the outbound activities).

A question here was whether the HEInnovate tool could help identify the weaknesses and strengths of the HEI in discussions and activities undertaken with its internal and external stakeholders. The discussions informed by the HEInnovate tool are supposed to be the start of action plans developed in collaboration with stakeholders. Each of the eight BeyondScale partners set out to carry out an inbound and outbound project to make their HEI more entrepreneurial. The activities that were part of the projects were implemented over a two year period (December 2019 – April 2022) with regular interactions (e.g., workshops, meetings) taking place between the project partners, the overall BeyondScale management and the project partner (i.e. CHEPS) responsible for carrying out the accompanying research that was part of BeyondScale. Apart from the partners' ambitions to successfully implement their planned activities, a further question addressed in the BeyondScale project was whether the HEInnovate tool could help monitor the change processes taking place in the eight HEIs involved in BeyondScale.
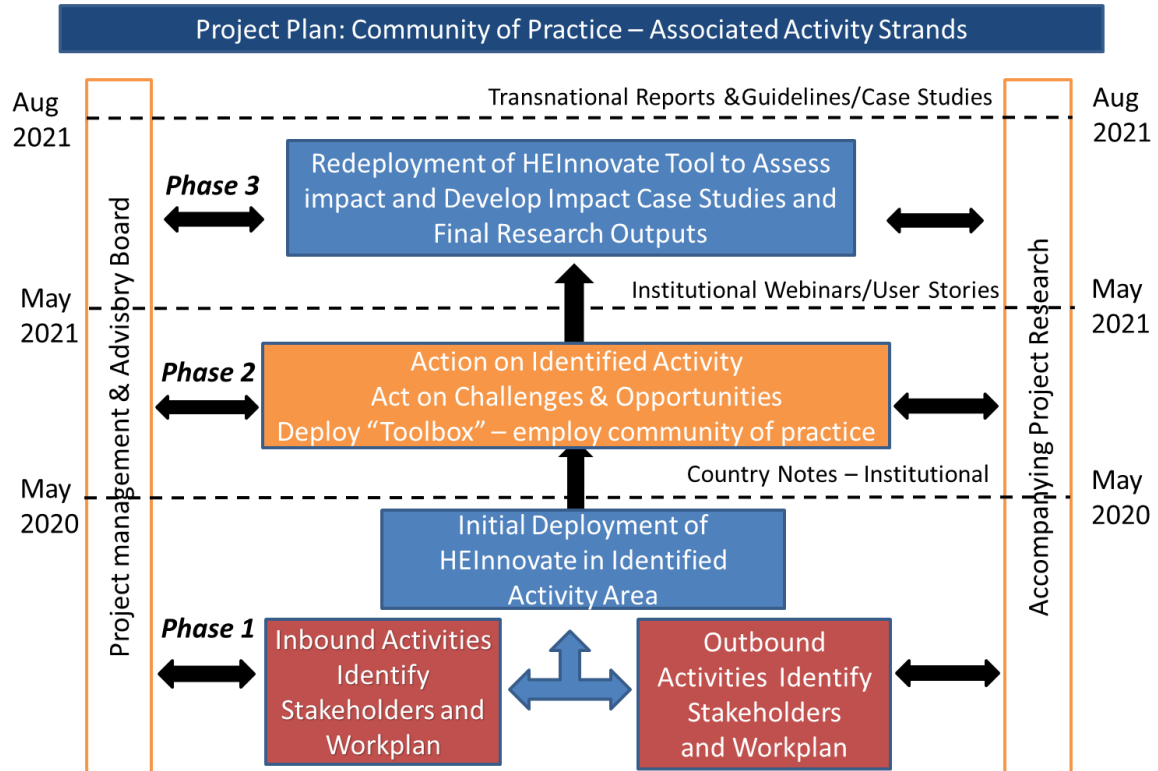
At the start of the BeyondScale project, a joint project plan was developed that set out how and when the HEInnovate tool should be used by the partners in course of their planned activities. This is shown in Figure 1, below.

The figure distinguishes three project phases. In the first phase, all project partners develop a plan for their specific inbound and outbound activities. During this first phase, the project partners also were to deploy the HEInnovate self-assessment exercise and the supplementary resources that are available on the HEInnovate platform. Combining the outcomes of using the HEInnovate tool with their individual institution's strategic ambitions, the partners set out to conduct activities to realise their objectives. The planned activities were specified in a so-called country note, prepared by each partner.

During the second phase, the activities included in the project plan are carried out and the project partners exchange experiences through a 'buddy system'. This Buddy system is peer learning activity, where partners invite comments and suggestions from other partners in the BeyondScale consortium – including from the researchers carrying out the accompanying research in BeyondScale. The partners reflect on their experiences in the deliverables of this phase and share their views with others in webinars, interviews and reports. In particular, they write short 'User stories' where they report on how they used the HEInnovate tool to prepare the interactions with the stakeholders in their inbound and outbound projects.

In the third phase, the project partners once again were to make use of the HEInnovate tool where possible, in order to assess the outcomes their activities. The deliverables of this phase are reports, i.e. impact case studies and overall (transnational) reports on the inbound and outbound activities.

Figure 1: The overall BeyondScale project plan (based on 2-year project duration)

Project Plan: Community of Practice – Associated Activity Strands

Aug 2021

Transnational Reports & Guidelines/Case Studies

Phase 3 — Redeployment of HEInnovate Tool to Assess impact and Develop Impact Case Studies and Final Research Outputs

May 2021

Institutional Webinars/User Stories

Phase 2 — Action on Identified Activity Act on Challenges & Opportunities Deploy "Toolbox" – employ community of practice

May 2020

Country Notes – Institutional

Initial Deployment of HEInnovate in Identified Activity Area

Phase 1 — Inbound Activities Identify Stakeholders and Workplan | Outbound Activities Identify Stakeholders and Workplan

Project management & Advisory Board

Accompanying Project Research

In phase 1, the first application of the HEInnovate tool was aimed at having the project partners carry out a self-assessment of their HEI in cooperation with their internal and external stakeholders. This assessment was meant to help the partners in aligning their planned activities to the needs of their internal and external stakeholders and to identify potential obstacles. The self-assessment statements included in the HEInnovate platform provided the basis for this analysis. The project partners used the HEInnovate questionnaire where possible, adapting it to their own needs, and using the results to specify some potential actions - interventions – to transform their institution and making it more entrepreneurial. The actions could be focusing on internal stakeholders (e.g., students, lecturers, researchers in the HEI) or external stakeholders (e.g., businesses in the region, non-profit organisations, local government). In this phase, data and further information was collected on the basis of the amended HEInnovate self-reflection statements and a workshop with the stakeholders to be involved in the inbound and outbound projects. How the HEInnovate tool was used and redesigned is described further below in this booklet.

The second application of the HEInnovate tool was intended to make the BeyondScale partners focus on the progress they had made that far in their organisational change projects. The project partners reviewed the progress of their work against the objectives set - doing so in consultation with their stakeholders. Again, how the HEInnovate tool was used depended on the individual institutions and their specific projects. Because the progress made very much differed in the various

inbound and outbound projects (also due to the Covid pandemic), the way HEInnovate contributed to this reflection very much differed between the BeyondScale partners. However, the common element in this was the organisation of workshops and webinars to disseminate and discuss the (intermediate) project outcomes around pushing forward the institution's entrepreneurial agenda. Again, how the HEInnovate tool was used and amended is described further below in this booklet.

1.2 The role of the accompanying research in the BeyondScale Project

As part of the BeyondScale project, the accompanying research was meant to collect the experiences of the project partners in using the HEInnovate self-assessment statements, the HEInnovate case studies and the other resources made available on the HEInnovate platform. On the basis of these experiences and further interviews with the project partners, the accompanying research analysed the use and usefulness of HEInnovate tool. Furthermore, the collected experiences and partners' reflections were systematically analysed and translated into recommendations for the further development of the tools and resources made available through HEInnovate.

To answer the question of how HEInnovate supports the implementation of the entrepreneurial agenda in higher education institutions, the accompanying research developed a specific perspective – an analytical framework. The accompanying research was particularly focused on how the transformation of higher education institutions towards entrepreneurship is taking shape and to what extent HEInnovate tools and methodology meet the specific requirements of this transformation process. This analytical perspective and the research questions following from that are summarised in the box below.

> **Box 1: Thesis and guiding research questions for the accompanying research**
>
> **Thesis**: *Implementing an entrepreneurial agenda requires higher education institutions to manage a multidimensional change process.*
>
> **Research questions**:
>
> - How do *change processes/organisational development* processes towards *implementing the entrepreneurial agenda* in higher education institutions look like?
>
> - What changes at the individual, group and organisational level does the *change management process need to facilitate* to successfully implement the entrepreneurial agenda?
>
> - How can *change management* be facilitated by the higher education institution?
>
> - What *barriers* (at national, institutional, department and individual level) *hinder* the implementation of the entrepreneurial agenda? What *factors support* its implementation?
>
> - How can the *HEInnovate platform contribute* to a successful implementation of the entrepreneurial agenda?

Against this background, one of the first tasks of the accompanying research was to develop a deeper understanding of the entrepreneurial university and the transformation processes that contribute to its emergence. In addition, the task arose to present the HEInnovate methodology systematically and to compile the existing knowledge on the application of the HEInnovate tool and

the results. This knowledge served as the basis for adapting and modifying the HEInnovate methodology tested in the BeyondScale project.

The results of this first inventory are presented briefly below. The first step is to work through the definition of an entrepreneurial university. Second, the specific features of change processes in universities are presented, which are related to the implementation of the entrepreneurial agenda. This understanding is compared to the organisational change logic underlying the HEInnovate tool and its approach.

1.3 What is an entrepreneurial university?

Embedding entrepreneurship or becoming more entrepreneurial is not a new topic for higher education institutions (HEIs). Already since the 1990s, HEIs engage in strengthening their third mission – the creation of public value with the help of the (scientific) knowledge established through research. The literature frequently refers to the Triple Helix Model to have kicked off the discussion about the entrepreneurial university (see, e.g., Feola et al. 2021; Etzkowitz et al. 2000). Overall, the establishment of the entrepreneurial university reflects societal demands for universities to open up to societal concerns. An entrepreneurial university will need more and stronger collaboration with public authorities and the business sector, and to provide knowledge that is relevant for societal needs and problems.

In the literature, one can find several definitions of the entrepreneurial university. In a very first definition, an entrepreneurial university was understood as a higher education institution that incorporates "economic development (…) as an academic function, along with teaching and research" (Etzkowitz 1998). The term *third mission* is now frequently used to describe the institutions' response to these external demands and expectations, which constitutes a major mission next to the primary missions of education and research. The third mission thus forces HEIs to broaden their task portfolio and engage in collaborations with their close environment, and putting knowledge to use. Furthermore, HEIs are expected to contribute to societal 'wisdom' through information, evidence for policies, dialogue with society, and evidence for policies.

While the idea of knowledge transfer and economic development prevailed for several years, the concept of the entrepreneurial university has been expanding to further areas (Guerrero-Cano et al. 2006). Researchers currently address, among others, topics such as:

- Understanding the role of the university in its region
- University-business collaborations
- Embedding entrepreneurship in teaching and learning
- Social entrepreneurship: Creating value for and collaborating with the not-for-profit sector

Currently, the literature provides a wide variety of definitions of the entrepreneurial university, with most of them highlighting one of the topics mentioned above. While being different, these definitions agree that entrepreneurial universities have the following features:

- Engaging and collaborating with outside groups and organisations, mostly from the industry sector, but also from the 'third', i.e., non-profit sector;
- Crossing the boundaries of the traditional fields of engagement in research as well as education

- Aiming at the creation of public value and the valorisation of academic research and supporting innovation
- Including 'new' structures and managerial values to facilitate entrepreneurship.

However, for this, HEIs will need to transform to become more entrepreneurial. This transformation extends to various aspects of HEIs, including:

- the alteration of governance and management structures;
- the transformation of old departmental structures, alongside the establishment of new units and departments specialising in entrepreneurship;
- the establishment of (more) collaborations with external stakeholders;
- the integration of entrepreneurial values and cultures;
- the uncovering of new additional funding streams.

Many of these aspects are covered by the HEInnovate tool and they form the foundation of the self-assessment statements that can be used by HEIs to reflect on their entrepreneurial character.

1.4 The specific character of entrepreneurial change processes in higher education institutions

Entrepreneurial universities thus clearly differ from the more traditional universities that do not engage in these areas. It is also clear 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.

In his famous study, Clark (1998) identified five elements that a university will need to address when transforming into an entrepreneurial university (see Figure 2):

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.

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 extended 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. 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.

Figure 2: The entrepreneurial university and its characteristics (after Burton Clark, 1998)
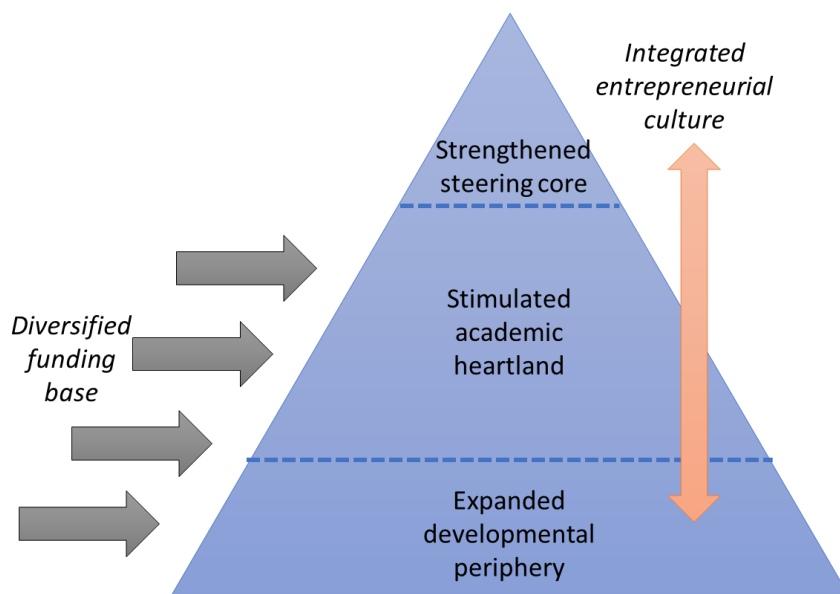
Source: Authors (inspired by Clark, 1998)

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.

1.5 The HEInnovate tool and methodology

The HEInnovate tool and its methodology address this challenge of becoming more entrepreneurial by supporting HEIs in their efforts to encourage entrepreneurship and innovation. This is essentially done through the HEInnovate self-assessment tool, with which HEIs can identify their existing entrepreneurship and innovative potential as well as their strengths and weaknesses. As a self-assessment tool, HEInnovate is essentially designed to initiate discussion processes in HEIs and to bring different stakeholder groups to talk to each other. At the same time, the tool can also be used to accompany change processes by carrying out self-assessments at different points in time. Before we go into detail about this process, we would first like to present a few background facts about HEInnovate and its origins.

HEInnovate stands for a set of resources that aim to support the transformation of HEIs towards more entrepreneurship. Currently, the HEInnovate website provides the HEInnovate self-assessment tool, a database with case studies of HEIs that have been changing towards more entrepreneurship. Furthermore, there is a rich set of training materials on the HEInnovate platform to guide users when applying the HEInnovate tool in a transformation process. More recent tools of the platform are EPIC and Entretime. EPIC provides support for measuring the impact respectively the learning outcomes of entrepreneurial teaching and learning in students.[1] Entretime is a platform for higher education teachers who wish to enhance their entrepreneurial teaching skills.[2]

HEInnovate is a joint initiative of the European Commission and the OECD, who have been funding the tool and its implementation and roll-out. However, HEInnovate is also a bottom-up initiative: A pan-European HEInnovate Expert Group helps shape the content of the HEInnovate self-assessment tool. Since its implementation in 2013, the HEInnovate self-assessment tool has continuously been adapted and enhanced to better serve the needs of HEIs. Since then, the tool was regularly revised, based on the feedback from the HEInnovate expert group. It was gradually adapted to the needs of HEIs and the latest developments in the higher education sector.

The tool currently includes 40 statements on eight different topics, the so-called dimensions. The current dimensions are shown in Figure 3. The number of dimensions and, therefore, also the number of statements has steadily increased in recent years. Most recently, a new dimension was added: "Digital Transformation and Capability", which was fundamentally revised again in 2021.

Users can use the statements to rate the performance of HEIs in the field of entrepreneurship. For this purpose, the statements offer a scale comprising values from 1 to 5, whereby the content of these values is left to the users to define. In terms of content, the statements cover various aspects of entrepreneurial HEIs and their capacities and skills in this area. This includes the managerial or governance structures of the HEIs and their services in the three essential missions of research, education and knowledge transfer. Figure 3 shows an overview of the currently available dimensions of the HEInnovate self-assessment tool.

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[1] EPIC = The Entrepreneurial Potential and Innovation Competences. See:
https://heinnovate.eu/sites/default/files/EPIC_user_guide.pdf

[2] See: https://heinnovate.eu/en/related-projects/entretime

Each of the eight dimensions includes five statements that users can use to evaluate the HEI with regard to its achievements in the field of entrepreneurship. As stated above, these ratings can be made using a scale ranging from 1 to 5. There are no immediate explanations of the meanings associated with these values in the online version of the self-assessment tool. The explanations found under the respective statements indicate that higher values indicate a better performance of the HEI in the specific dimension. However, the interpretation of the values is left to the users of the statement/questionnaire.

Users can use the self-assessment tool in a variety of ways: as an individual assessment - i.e. the assessments are only carried out by one person, or as a group assessment in which internal and external stakeholders assess their HEI. The instrument also offers the option of selecting dimensions for the self-assessment, i.e. not all statements have to be used.

Figure 3: The eight HEInnovate dimensions (see: www.heinnovate.eu **)**

HEInnovate essentially aims to kick-off transformation processes that are informed by a self-assessment of the institution's performance. Therefore, the self-assessment tool provides a list of statements that cover eight dimensions representing the various characteristics of entrepreneurial

higher education institutions. Currently, the self-assessment tool lists 42 statements across the eight dimensions shown above. Figure 4, below lists the statements for the HEInnovate dimension "Entrepreneurial teaching and learning".

The self-assessment serves as a strength and weakness analyses. As a result, the assessment should reveal whether the listed aspects are perceived as strengths or weaknesses of the HEI. Ideally, discussing the evaluation results, in particular diverging evaluations across different stakeholder groups, should help identifying appropriate actions that will effectuate the institutional change.

Figure 4: Entrepreneurial teaching and learning in the HEInnovate self-assessment tool

Entrepreneurial teaching and learning involves exploring innovative teaching methods and finding ways to stimulate entrepreneurial mindsets. It is not just learning about entrepreneurship, it is also about being exposed to entrepreneurial experiences and acquiring the skills and competences for developing entrepreneurial mindsets.

Statements (to be scored on a five-point scale):

1. The HEI provides diverse formal learning opportunities to develop entrepreneurial mindsets and skills.
2. The HEI provides diverse informal learning opportunities and experiences to stimulate the development of entrepreneurial mindsets and skills.
3. The HEI validates entrepreneurial learning outcomes which drives the design and execution of the entrepreneurial curriculum.
4. The HEI co-designs and delivers the curriculum with external stakeholders.
5. Results of entrepreneurship research are integrated into the entrepreneurial education offer.

Conducting the self-assessment is simple: Users have to evaluate to what extent they think that the different aspects described in the statement are present in their HEI – and they do so on a five-point scale. When conducting the evaluation, users can use a web-based tool that is included in the HEInnovate platform. For each dimension the tool then generates an average score based on the scores of the individual users. These average scores are then presented in a summative overview that shows the stronger and weaker dimensions in the institution's performance. Based on their evaluation results users, are then provided with a number of institutional case studies and further resources. These resources offer examples and experiences of HEIs that – to some extent – had a similar profile and found their way in implementing changes towards becoming more entrepreneurial.

However, this self-assessment is only one of many ways in which the HEInnovate platform can be used. Ideally, the self-assessment is carried out by internal and external stakeholders of the HEIs in an interactive workshop format. This format allows the participants to discuss contrasting perceptions of stakeholders in order to obtain more details about the institution's strengths and

weaknesses. In addition, the tool can be adapted to the needs of the users in many ways: e.g. with regard to the number of evaluators (individual or group ratings) or the selection of statements to be used in the assessment.

For those HEIs that plan to have a more interactive format to evaluate their performance, the platform also suggests three different workshop formats. The first format serves as an introduction to the tool for novice HEInnovate users. The second and third format aim to support transformation processes in HEIs. The second format foremost is about starting up a transformation process; the third format aims to follow-up actions that were planned in these second type workshops.

Figure 5: The HEInnovate Process
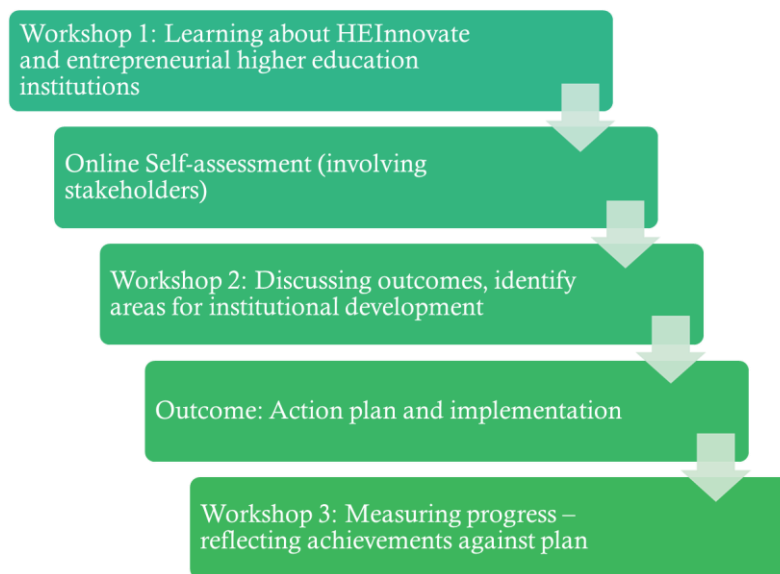
1.6 The transformation process

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.

The HEInnovate platform presents the dimensions and characteristics of an entrepreneurial university rather than highlighting the interventions and change processes that make a HEI entrepreneurial. This becomes clear when studying the self-assessment statements that HEInnovate provides for users that wish to evaluate the entrepreneurial nature of their institution. The statements encourage users foremost to compare their institution with an idealised entrepreneurial institution. After completing a self-assessment, users of the HEInnovate platform are provided with case studies and user stories that match their profile to inspire them when preparing to change their institution towards that ideal.

Currently, the HEInnovate case studies are not based on a common framework that identifies goals, characteristics and actions. Rather, the case studies state the intervention and highlight some outputs and outcomes. To some extent, the change process, and the factors that played a role in it, are not addressed explicitly.

An analysis of the experiences of the eight partners in the BeyondScale project revealed that the case studies and user stories are not always perceived as inspirational, because they provide too little information on what (and how) actions were implemented to achieve the wished-for result. Thus, it often remains unclear to the reader of the case studies how the building of a more entrepreneurial institution was achieved.

Nonetheless, 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.

However, most of the studies found in literature (or te HEInnovate website) 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 6) 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 6: the *influencing factors* at the second level, the *supporting mechanisms* on the third level, and the *context* - on the fourth level.

Figure 6: Analytical Framework
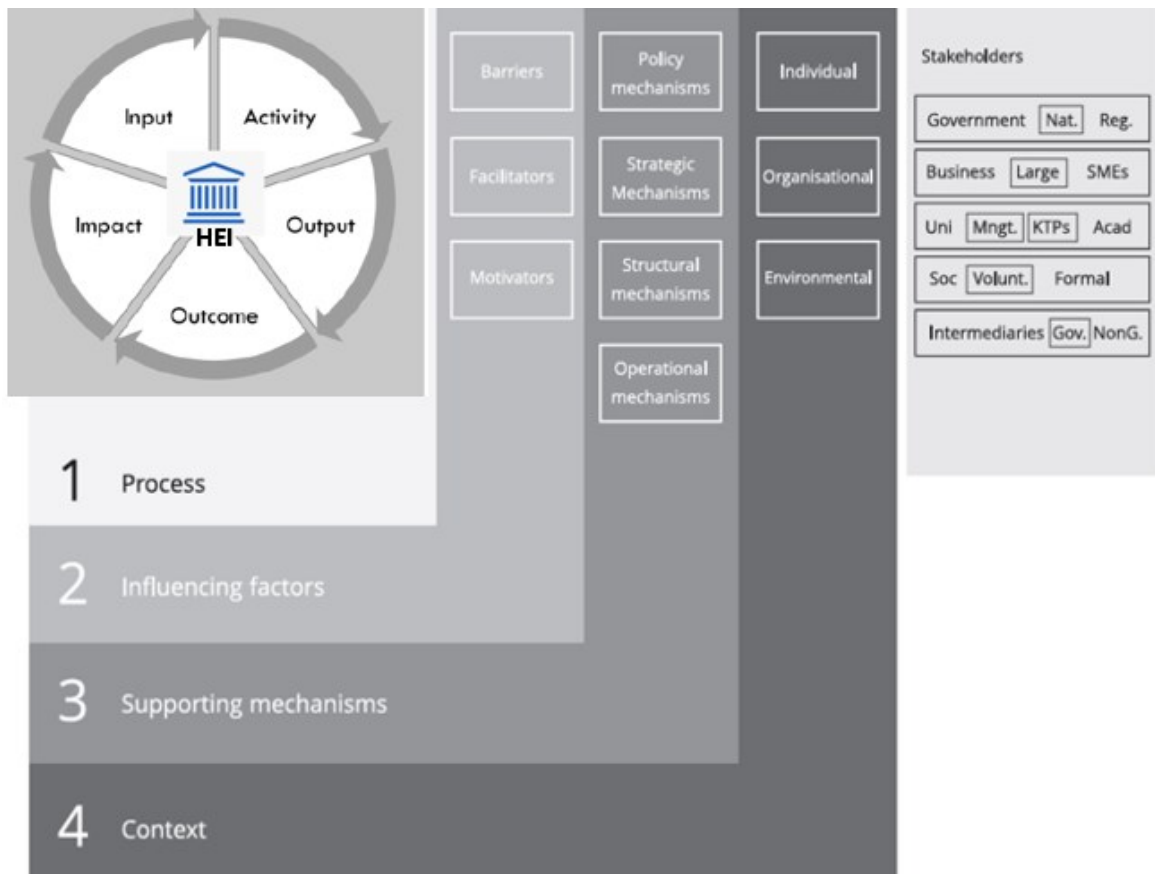
Source: Davey, T. et al. (2018): The state of university-business cooperation in Europe. Final report. Luxembourg: Publication s Office of the European Union, p. 26.

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 dimension 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.

In the next chapter, we will incorporate some of the elements of this analytical framework in the *structured approach* that we propose for HEIs wishing to engage in transformation processes aimed at becoming more entrepreneurial. The structured approach to such organizational change processes combines elements of the HEInnovate self-assessment (i.e. its statements, workshops) and the elements shown in the analytical framework (e.g., the inputs, outputs, facilitators, barriers). This approach is based on the accompanying research carried out as part of BeyondScale – so it is inspired by the change processes (the inbound and outbound projects) undertaken by the eight BeyondScale partners and the way they made use of the HEInnovate tool in their projects. This

BeyondScale experience is combined with a review of the literature around organizational change and entrepreneurship in higher education. A part of that literature survey was used as the basis for providing targeted advice (say, inspiration) to the HEIs in BeyondScale and ended up in an addition that was made to the HEInnovate tool, namely the Inspiration Fiches.

2. Applying HEInnovate to support entrepreneurial change processes: the PDCA approach

2.1 Introduction: The PDCA model

In this chapter, we describe the project phases that can be distinguished in entrepreneurial change processes in HEIs. It is meant to illustrate the argument made earlier in section 1.6, where we stated that transformation processes towards entrepreneurship in higher education can make use of the HEInnovate tool (section 1.5) but that tool will have to be enhanced by using a more analytical approach (see Figure 6) that pays attention to the facilitators, barriers and supporting mechanisms around organisational change in higher education.

Based on the experience collected in the BeyondScale project, this chapter includes some hands-on practical advice on how such change processes can be managed in the different phases in a project cycle. This is meant to support project managers, project members, and project partners involved in organisational change processes. In other words, this chapter provides guidelines for HEIs that wish to start projects aimed at encouraging entrepreneurship and innovation.

The general methods and ideas about project management can be found in several handbooks.[3] However, the rules of the game for projects in higher education institutions differ from those in commercial organisations, as was already indicated in chapter 1. Disciplinary cultures, traditions and interests play a particularly important role in HEIs. This produces some challenges for projects to succeed, compared to projects in which commercial motives play a more prominent part.

However, in all cases, projects are characterised by four features: a group of people, a goal, limited time & money and a certain level of uncertainty regarding whether the goals will be achieved. This is in line with the general definition of a project:

> *A project is a series of activities aimed at bringing about clearly specified*
> *objectives within a defined time-period and with a defined budget.*

However, projects are dynamic processes – with lots of back and forth, feedback loops and adjustments made along the way, implying that the group of people involved, the exact goals and the resources (time, budget) available may change during the project.

Dividing a project into phases makes it possible to manage it and to track progress towards goals. The following subsections describe the four phases that are often used – and have been useful – in practice. The four phases are based on Deming's well-known PDCA (Plan-Do-Check-Act) cycle - a management method used in business for the control and the continuous improvement of processes and products.

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[3] For instance: Turner, R. (2016). Gower handbook of project management. Routledge; EuropeAid (2002), Project Cycle Management Handbook.

Phase	Description
Plan	Establish objectives and processes required to deliver the desired results
Do	Carry out the actions defined in the previous step. Test potential ways to address a problem/ challenge.
Check	Study the data and results gathered from the 'do' phase and compare these to the expected outcomes
Act	Implement the findings from the 'do' and 'check' phases and identify problematic issues, inefficiencies and opportunities for improvement, The causes of such issues are investigated, found and eliminated by modifying the process

In the graph below, these stages are applied to the projects undertaken by the BeyondScale partners. The projects are all about making the HEI more entrepreneurial and innovative.

Figure 7: The Deming PDCA cycle
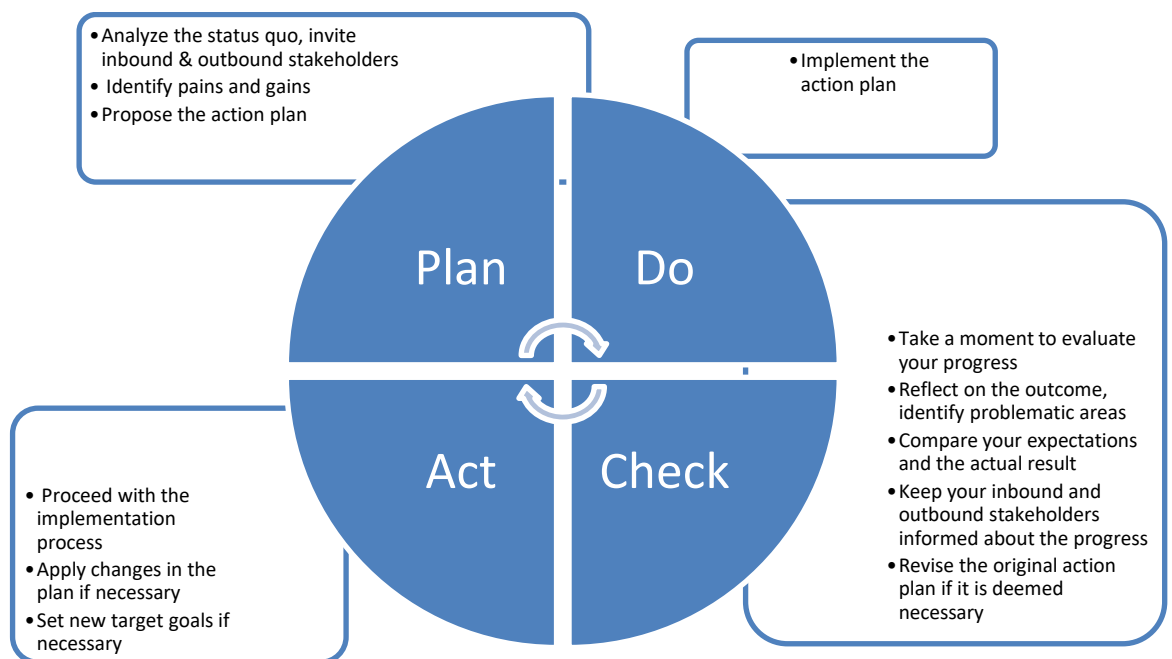
The following sections describe the steps in this PDCA model. On the left-hand hand of the page the reader will find some general advice related to the PDCA cycle approach to running projects such as those undertaken as part of BeyondScale. The right-hand side of each page shows illustrations and experiences from the BeyondScale project and the eight HEIs that collaborated in the project – each with their own organisational change project.

2.2 Inception stage (Plan)

In the inception phase, plans are made to achieve the project's goals.

The key questions	BeyondScale

In the "Plan" phase, a detailed plan is developed and goals are identified. Then, an action plan is developed, work is delegated, and the key milestones are defined.
 	
Questions to be answered in the Plan phase include the following:
 	
1. Why this project?
2. Is it feasible?
3. Who are possible partners – the stakeholders – in the project?
4. What should the results be?
5. What are the boundaries of this project (what is outside the scope of the project)?
6. What about time and resource needs?
	In BeyondScale, two different types of projects were defined:
	
	    (1) inbound projects
	    (2) outbound projects.
	
	They are described below:
	
	Inbound projects
	
	A set of activities undertaken by a HEI that focuses primarily on HEI-internal matters and its internal stakeholders (e.g. staff, students). Examples are the development of the management capacity of the institution, the development of the institution's curriculum, the development of the institution's entrepreneurial support systems.
	
	Outbound projects
	
	A set of activities undertaken by a project partner that focuses on external matters and external stakeholders, such as engagement with the professional field in the development of academic programmes and R&D activities, engagement in social entrepreneurship activities or engagement with regional bodies to develop entrepreneurial educational, economic, social and cultural plans at a regional level. Also activities aimed at the internationalisation of the institution are part of outbound activities.

1. Why this project? The reason why the project is started often will be to address a particular problem – an issue, a challenge – and to tackle a situation that the HEIs currently regards as suboptimal. In many cases, the project will have to fit in with the institution's (or department's; unit's) strategy. Identifying the problem, its size, and what causes it, is not always an easy task, and some problems first need to be studied more closely as part of the project.	**Example: Fachhochschule Campus Wien** The FH Campus Wien (FHCW) is the largest university of applied sciences in Austria. It is located in the capital city Vienna and has about 6,000 students across 64 study programmes. As part of the BeyondScale project the FHCW undertook two projects that are in line with its institutional strategy. The first FHCW project, Digitalization in Teaching & Learning (T&L), was triggered by the sudden Covid-19 pandemic, that required the introduction of digitally-enhanced T&L and revised contents of curricula. The second FHCW project is aimed at increasing awareness on entrepreneurship and innovation at the FHCW. It is focused on outbound stakeholders, as many teachers of entrepreneurship come from companies and from the professional field.

In addition, one also needs to identify who is affected by the problem – the stakeholders.

Then, what follows is a first analysis of the potential causes ('drivers') of the problem, including an identification of the causes that are within the sphere of the organization and the ones that lie outside its control. The project will, in many cases, be focusing on the causes and intended to provide or test some remedies aimed at addressing the problem.

2. Is it feasible?

There is a risk that the project's goals are ill-defined, or that project partners have different understandings and perceptions about the kinds of outcomes that the project will have to deliver. Overloading the project plan with multiple objectives and sub-projects is a risk. If a project is expanding too much, it risks going off-schedule, exceeding its budget, and failing to achieve its original goals. This may lead to frustration later on in the next project phases.

3. Who are the stakeholders?

The stakeholders in the project are the ones affected by the issue at hand. To ensure the project is feasible and will produce useful results, a round of consultations or brainstorming sessions with some of the key stakeholders will be required. This helps to more clearly define the project's goals.

Stakeholder consultations often will go together with an analysis of the status quo – collecting information (i.e.

Example: Universität Innsbruck (UIBK)

The main goal of the UIBK inbound activity was to develop offerings for entrepreneurial learning which are tailored for the specific desires of the disciplines in Social Sciences, Humanities & Arts.

Example: FH Campus Wien

The strong involvement of the Rector and the Vice Rector and their commitment guarantee attention in the FH Campus Wien. The connection to the strategy and existing processes create a sense of urgency throughout the organization.

A broad range of stakeholders is involved in the digitalization project: the FHCW management, the academic staff (program managers and teachers), and students.

The FHCW feels it is important to discuss the future developments with external partners to be able to redesign existing curricula. It believes that digitalization must be given more consideration in curricula.

FHCW's *Digitalization* project started with an institutional self-assessment on the "*Digital Transformation and Capability*" dimension of HEInnovate. The results of this self-assessment were used as the start of the implementation of the new strategy of the FH Campus Wien (2020-2025).

evidence, reports, opinions) about the issue/challenge taken up in the project. Information will be sought from both the internal stakeholders (including staff, lecturers, students, alumni) and the external stakeholders (business, recruitment officers, government organisations) about what they regard as the challenges, causes, solutions and barriers to be addressed in the project – the pains, as well as the gains.

The stakeholder consultations may also be used to decide on the evidence to be collected later on, as part of the project. Some of the stakeholders consulted eventually may be invited to the project team; others may be invited to participate in some of the actions foreseen in the project.

4. What should the results be?

The results of the project are also known as the *deliverables* (sometimes known as *milestones*). The choice for a particular type of project largely determines its deliverables.

For instance, once the problem to be addressed is identified, a very useful result may be getting a better sense of the causes ("drivers") of the problem and their relative importance. Obviously, this problem analysis may point at behaviours or structures that would have to change in the HEI to address the problem.

Example: FH Campus Wien (continued)

For the FH Wien, the second BeyondScale activity dealt with both the establishment of a network for teachers on entrepreneurship and innovation and the identification of entrepreneurial learning outcomes.

This means the result would have to be a lively network of teachers on entrepreneurship ("*Campus Connect*").

FHCW used the EntreComp Framework as a first step in classifying learning outcomes as entrepreneurial. The digital database ("*eCurriculum*") of the FH Campus Wien, which consists of all curricula of the study programs, will make it possible to classify learning outcomes as entrepreneurial.
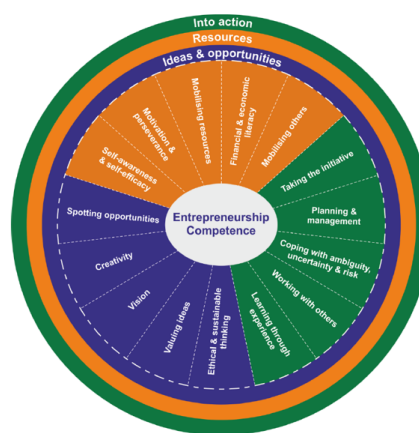
Example: Polytechnic Institute Viana do Castelo

The 'inbound' activity of the Instituto Politécnico de Viana do Castelo (IPVC) in Portugal was to encourage entrepreneurial Teaching and Learning by means of looking for ways in which opportunities could be found for the development of entrepreneurship teaching and learning on social innovation.

The focus was on IPVC's "Inclusive School project" that involved teachers from IPVC as well as representatives from NGOs and municipalities. The goal was to develop new teaching materials and new methods of teaching (e.g. live case – studies). This is intended to support the acquisition of practical entrepreneurial competences and experiences among students.

5. What are the boundaries of this project?

Projects will often be limited in terms of time, scope and budget. Therefore, expectations will need to be managed. Projects to which people keep adding objectives and projects that keep expanding are nearly certain to go off schedule, and they are unlikely to achieve their original goals.

To prevent the development of false expectations concerning the results of the project, it makes sense to explicitly agree with the HEI's leadership on the type of project that is being started.

For instance, a project that is expected to deliver a fully functioning product or service has a much wider scope than a project that is expected to deliver a prototype, or a proof of concept.

HEIs sometimes start a pilot in one of their faculties or centres to develop and test new things before it decides to scale up the programme/initiative across other faculties.

6. What about the time and resources needed?

The management of time and money is an important part of project management. The project plan will have to specify the deadlines for tasks, the amount of time that these tasks may take. Managing time also involves ensuring that tasks are completed on time.

Example: University of Ruse

The University of Ruse "Angel Kanchev", in Bulgaria, initiated an outward bound project to raise awareness among the firms in its region for the potential mutually beneficial knowledge interactions between the university and regional business.

A workshop was organized to focus on the self-reflection statements included in the HEInnovate dimension of "Knowledge exchange and collaboration." To ensure that the project did not overreach, the participants in the discussion were limited to the leadership of the university, some scientists working in the engineering department, and a representative from the business world.

The expected benefits for the involved parties were: facility sharing between Ruse's scientific laboratories and the business partner. For the university, the benefits are the increased expertise of its scientists and additional scientific publications.

For the firm, the expected benefits are: improved company competitiveness; increased expertise of the firm's employees.

Example: NHL Stenden

The project plan for NHL Stenden (a University of Applied Sciences in the North of the Netherlands) is shown below:

Usually, projects are implemented over several months. In project plans, *Gantt charts* (see Figure 8, below) are often used to visualize the timing of the activities ('work packages'; tasks; deadlines) undertaken as part of the project. It shows which activities should take place in which phase of the project.

Figure 8 below also shows which activities overlap and whether there are dependencies between elements in the work plan.

Inbound activity NHL Stenden	Date
1.1 Project start-up	
Setting up the core team for the project	March 2020
Creating a steering group which will serve as a client for the project	September 2020
Informal discussion with executive board to establish further support for the project	September – October 20
Informal discussion with Center for Entrepreneurship which is currently in development	May 2020 - ongoing
Informal discussions with external stakeholders	June 2020
Creating project plan (one or two A4)	June 2020
Result: Action Plan for HEInnovate measurement, supported by management and team	June 2020
1.2 Execute first HEI-assessment/self-reflection	
Create name list of 25-100 potential respondents from management, staff, students	June 2020
Write invitation to go with request to fill out HEInnovate evaluation	June 2020
Send the invitation to fill-out HEInnovate questionnaire	June 2020
Check response rate, send reminders	July 2020
Get final result of first measurements, write a concise report with conclusions	September 2020
Send results to management and team	October 2020
Discuss results of steering group and team	November 2020
Result: Report with conclusions of first HEInnovate measurements	
1.3 Create Action Plan for improvements	
Prepare working session with stakeholders	
Execute working session with stakeholders, determining possible activities for improvement	November 2020
Determining terms and conditions for action plan	July - November 2020
Write action plan 2021	November 2020
Create support for action plan 2021, get funding	October - December 20
Explore possibilities for external funding, linked to Center for Entrepreneurship and other initiatives	January 2021
Write plans for internal and external funding	February - April 2021
Result: Action plan 2021, supported by internal organisation	*December 2020*
Result: Possible plan for external funding for period 2022-2025	*June 2021*

Figure 8: Gantt chart (example)

In the case of BeyondScale, each of the eight HEIs involved had a project manager who had the task of establishing sufficient controls over the project to ensure that it stays on track towards the achievement of its objectives.

2.3 Implementation phase (Do)

This subsection describes the project phase where the activities are implemented in order to achieve the project's goals.

The "Do" phase	BeyondScale

The "Do" phase

In the "Do" phase, the project plan developed in the first stage is implemented. Activities (e.g. as specified in the Gantt chart above) are carried out. Project partners and stakeholders are brought in, meeting schedules are prepared and further activities are undertaken. The agreed resources are used to achieve the deliverables in the project plan.

BeyondScale

The eight institutions that were part of BeyondScale each selected the HEInnovate dimensions that were the most relevant to their individual institutional projects – i.e., their inbound and their outbound project.

The initial stages in project execution: involving stakeholders

Many projects, including those initiated as part of BeyondScale, are dealing with *organizational change*. This implies that representatives of the institution's constituencies – its internal stakeholders, as well as its external stakeholders, say clients, customers – will be required to actively engage in the project's activities. This implies that meetings, agreements and joint activities with stakeholders will be an important part of the first stages in such a project.

Example: Munster Technological University (MTU), Ireland (formerly: Cork Institute of Technology)

As part of BeyondScale, MTU (at the time: CIT) explored how it can expand its entrepreneurship and innovation ecosystem to benefit businesses and organisations in the region as well as to better support its students. This may require CIT to upgrade its links with external partners in the region. This outbound project is managed by the Hincks Centre for Entrepreneurship Excellence at CIT.

Deploying the HEInnovate tool

One of the first activities that the partners in the Beyond Scale project undertook was the deployment of the HEInnovate tool for kicking off their organizational change project. This was done by distributing a questionnaire to a selection of respondents inside and/or outside the HEI.

Communication

Communicating with stakeholders will not just provide more insights and information to be used for the purpose of the project, but it also will help build trust between the participants in the project and manage their expectations about the outcomes of the project. This will enhance the legitimacy of the project.

Meeting stakeholders & preparing meetings

In the "Do" stage, there will be regular meetings: meetings of the project team, and dedicated meetings with participants and

The eight BeyondScale partners deployed the HEInnovate tool to assess the "state of play" in their institution (or the selected department in their institution). For this, the partners started from the existing HEInnovate

stakeholders in the project. The latter can have different purposes, depending on the requirements of a project and the challenges and opportunities. Having a group of people sharing their thoughts and ideas on whatever is on the agenda for the meeting can produce many ideas, but to get the most out of meetings, a thorough preparation of the meeting is essential.

For a project that is meant to encourage organizational change, it is important to start with people that are motivated and that can provide relevant information on the state-of-play in the organization, the key challenges and the potential solutions to address the challenges or perceived problems. Information on some of these issues will probably already have been on the table at the 'Plan' stage of the project (see above), but in the "Do" stage they will reappear and require further investigation.

The HEInnovate self-assessment statements

As explained earlier in this document, HEInnovate is a statement-driven self assessment tool to be used by respondents (say, stakeholders in/of the HEI) for assessing the state-of-play in their organization using a series of questions related to eight dimensions that are related to entrepreneurship and innovation in HEIs. HEInnovate guides HEIs through a process of identification of strengths and weaknesses, prioritization, and action planning.

The results of this self-assessment exercise on some of the eight HEInnovate areas/dimensions can be used to inform the project team in preparing meetings, planning its activities and for providing inspiration for the actions to undertake for pushing forward the institutions' entrepreneurial agenda. As a self-reflection tool, HEInnovate can help HEIs understand themselves better – in particular when it comes to achieving their entrepreneurial ambitions.

statements – using them as questions in a questionnaire that was either sent around to selected stakeholders or that was used as a guide in a meeting with stakeholders. The answers collected from the questionnaire were used to identify existing challenges and barriers to the entrepreneurial capacity and to collect – bottom-up – exemplary practices and ways to address the entrepreneurial challenges.

Country Notes

As part of the initial stages in the "Do Phase" of BeyondScale, each partner HEI prepared a plan – a country note -that specified the initial situation and outlines the proposed activities, associated outcomes and objectives; the output of the initial deployment of the HEInnovate tool, including potential barriers, challenges and opportunities identified.

Example: Munster Technological University (MTU), Ireland (formerly: Cork Institute of Technology)

A questionnaire was distributed by CIT's Hincks Centre to gather information on the nature and purpose of CIT's existing and potential collaboration with external stakeholders.

Results from the questionnaire were used as an input in a workshop with external stakeholders (see the table below).

Modifying the HEInnovate self-assessment questions

To make the questionnaire relevant to the situation of MTU and to increase the usefulness of the information that it sought to collect, the existing HEInnovate statements were slightly modified.

In the case of MTU/CIT's outbound project, the HEInnovate dimension that was the most relevant to consider was "Knowledge Exchange and Collaboration". The HEInnovate tool has five statements, shown below in the left hand column. CIT's external stakeholders – its regional / local businesses and organisations – were invited to express their views using a five-point scale

As part of the preparation of further steps, the team in charge of the project will have to ensure that the stakeholders involved in the project – in project meetings and project activities – will not be overburdened with tasks and additional work, because for many of them the project is a commitment that comes on top of their regular work. Therefore, the number and duration of meetings and the time spent on tasks such as filling in questionnaires will have to be kept within bounds.

Attention for quality

To reflect on the use and usefulness of the HEInnovate tool during the activities undertaken as part of the BeyondScale project, CHEPS was commissioned to support the project partners in applying the HEInnovate tool and at the same time draw some lessons on how the tool could be improved further.

This 'accompanying research' work package can be regarded on the one hand as part of the quality assurance provisions in the project and on the other as part of the dissemination activities.

CHEPS assisted the partners' in their use of the HEInnovate statements and the supplemental questionnaire

ranging from 1 (very low), to 5 (very high). This is shown in the middle column.

Supplemental questions (example: MTU)

The invited respondents also received a number of supplemental questions. Creating, writing, developing these questions (the right-hand column) was rather time-consuming on the part of MTU/CIT but helped in the preparation of the workshop with external stakeholders three weeks after the sending of the questionnaire.

The responses to the questionnaire unfortunately were rather scattered and incomplete – only a few provided useful answers. Others did not manage to complete the survey.

Looking back at this experience, MTU/CIT regarded the dissemination of the questionnaire as a way to prepare the external stakeholders (i.e. the business representatives) for the workshop to be held three weeks later. In that sense, the questionnaire served its purpose. However, MTU/CIT did experience that business representatives are hesitant to spend time on questionnaires and are not used to the abstract language that is used in the questionnaire.

Example of HEInnovate questionnaire as used by CIT (note: CIT at the time of the survey, now MTU)

Statements from HEInnovate	Stakeholder view of the HEInnovate statements. (please mark the most appropriate)	Supplementary question(s) relevant to the statement (please insert your answers where marked)
1. CIT is committed to collaboration and knowledge exchange with industry, the public sector and society.	In your experience, how would you rate CIT's commitment to such collaborations: 1. Very low 2. Below average 3. Average 4. Above Average 5. Very high	1.1. In your experience, please provide up to three examples of such collaborations. • ANSWER: … 1.2. In your view, what further collaborations could be established to benefit your organisation? • ANSWER: …

2. CIT demonstrates active involvement in partnerships and relationships with a wide range of stakeholders.	In your experience, how do you rate CIT's active involvement in such partnerships/relationships: 1. Very low 2. Below average 3. Average 4. Above Average 5. Very high	2.1. Please provide some examples of such partnerships/ relationships (e.g., in terms of frequency, format, type of relationship). • ANSWER: … 2.2. In your opinion, why do you regard these as good examples of CIT's active involvement in such partnerships and relationships? • ANSWER: …
3. CIT has strong links with incubators, science parks and other external initiatives.	In your experience, how do you rate CIT's active involvement in such links: 1. Very low 2. Below average 3. Average 4. Above Average 5. Very high	3.1. Please give examples of such links to incubators, science parks and other external initiatives. • ANSWER: … 3.2. In your opinion, what further links could CIT establish to benefit your organisation? • ANSWER: …
4. CIT provides opportunities for staff and students to take part in innovative activities with business /the external environment.	In your experience, how do you rate CIT's innovative activities with your organisation/business: 1. Very low 2. Below average 3. Average 4. Above Average 5. Very high	4.1 Please provide examples of opportunities for staff/students to take part in innovative activities within your organisation. • ANSWER: … 4.2. In your view, how could CIT improve the opportunities for staff/students to take part in innovative activities which would benefit your organisation. (e.g., through improvements in products, services, ways of working, introducing new technologies, co-creation in R&D). • ANSWER: …
5. CIT integrates research, education and industry (wider community) activities to exploit new knowledge.	In your experience, how do you rate CIT's integration of research, education and industry (wider community) activities to exploit new knowledge. 1. Very low 2. Below average 3. Average 4. Above Average 5. Very high	5.1. Please provide examples of how CIT integrates research, education and industry/society to generate new knowledge and innovation. • ANSWER: … 5.2. In your opinion, how can CIT improve the integration of research and education to benefit your organisation's innovation activities? • ANSWER: …

Workshops; agreeing on action plans

The organisation of a first (kick-off) workshop with the stakeholders in the project was an integral part of each the BeyondScale partner's inbound and outbound activities.

The goal of the workshop is to engage selected stakeholders in the development of a shared action plan aimed at pushing the entrepreneurial agenda. The workshop is focused on a selected number of the eight dimensions in HEInnovate and offers the participants a chance to discuss the challenges, opportunities and the potential actions to be undertaken by the HEI and its stakeholders.

Having a structured format for the workshop was useful for encouraging and guiding the workshop discussion. The format that was agreed upon was the Value Proposition Canvas.


Example: CIT/MTU outbound workshop

The preworkshop questionnaire results, along with the Hincks Centre's own review of the strengths, barriers, and opportunities of MTU/CIT's entrepreneurship ecosystem, were useful for preparing a 90 minute workshop with representatives from regional businesses and organisations.

Example: Dublin City University - outbound workshop

DCU focused its outbound activities on the HEInnovate dimension of Knowledge Exchange and Collaboration. DCU wanted to investigate what knowledge exchange and collaboration currently looks like between DCU and the regional/local non-profit sector (i.e., the third sector) and explore ways to enhance collaboration. The main objectives it set for the workshop were to gain a better insight into what the landscape of knowledge exchange and identify and understand the main challenges.

Figure 9: Value Proposition Canvas
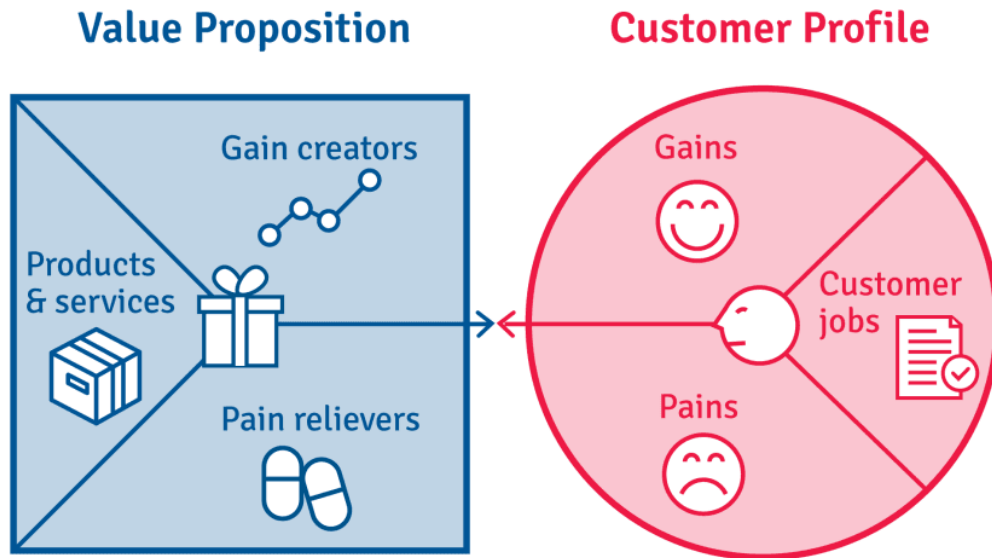
The Value Proposition workshop provides opportunities to obtain information on 'Customer Needs' – say the needs of students and staff – and the 'Value Proposition' of the organization (say, the HEI).

A major goal of using the canvas is to identify approaches ('products and services') that provide gains to the customers (i.e. the 'stakeholders') and relieves their 'pains'. The canvas structures discussions among HEIs and its stakeholders. It stimulates learning and helps develop the HEI's value proposition to its 'customers'.

The VPC is applied in interactive workshops in which customer and enterprise representatives participate. It structures the workshop discussion along the elements defined in the tool.

The VPC workshops can be organised on-line. The interaction between participants can be facilitated by tools such as Mural (a collaborative online whiteboard).

In the DCU workshop, the HEInnovate Knowledge Exchange and Collaboration questionnaire was discussed with the participants. It then investigated how knowledge exchange and collaboration could be enhanced between DCU and the third sector, using the value proposition canvas. A total of 12 individuals from the third sector participated in the workshop.

Ten members of DCU staff from five different disciplines also attended. This included five facilitators and five participants. In addition, three BeyondScale partners were in attendance as 'buddies'.

Figure 10: A Value Proposition Canvas (source: FH Campus Wien)
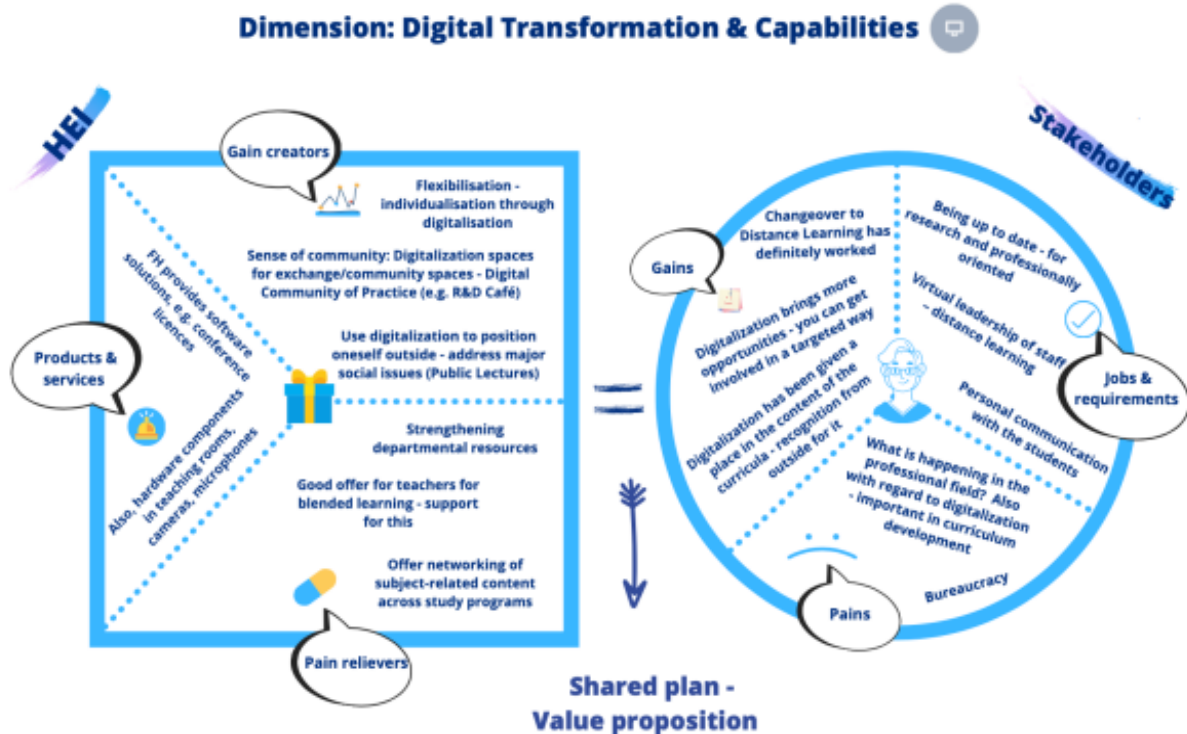
The Value Proposition

The value proposition is shown in a Business Canvas format and expresses , among other things, the value (gain) that stakeholders and the HEI can derive from engaging in their collaborative activity.

The VPC workshop sequentially discusses the elements 'Jobs', 'Pains' and 'Gains' of the Customers and then the corresponding Value Proposition, including 'Products and Services', 'Pain Relievers' and 'Gain Creators', the enterprise can provide to satisfy the customer needs.

A significant outcome of the workshop is to achieve a fit between the different things mentioned in the Customer's segments (right-hand side of the canvas) and the products and services proposed by the organization in the form of adapted or improved services.

The workshop allows the project team to obtain useful information for the project: on the gain creators and pain relievers that fit the stakeholders' needs, and on what is required to

The Value Proposition of the FH Campus Wien (see Figure 10)

At the FH Campus Wien, "pains" related to the digitalization of teaching and learning included digital literacy among students, a lack of information on the key trends in the professional field, and finding a balance between individualization and standardization.

The workshop very much helped identify internal barriers on the institutional level, such as the organizational structure of the FH Campus Wien, given that it consists of independent organizational units. Its resources need to be used across competing priorities and decision-making – also with respect to the digitalization agenda – is sometimes slow and bureaucratic.

In contrast, identified "*gains*" included a changed mindset across the entire organization, an organization that quickly embraces the potential of distance learning and working from home.

overcome obstacles that stakeholders and the HEI are facing.

The **left-hand side** of the canvas (Fig 9; Fig 10) focuses on what the HEI can offer as an organisation. It touches on the three items in the canvas, shown in the table below together with some examples.

Products & Services
(Project Activities)
Certificates for teachers
Entrepreneurship module
Gain creators
(inputs; motivators)
Educational support for educators
Physical infrastructure/platform
Pain relievers
(facilitators)
Subsidies
ECTS Credits
Compensation (money; time)

The **right-hand side** of the canvas looks more at the 'demand side': what are the needs and requirements of the 'customers' – both the internal stakeholders (say, staff and students of the HEI) and the external stakeholders (e.g., local businesses; employers).

Outcomes for customer
(Impact)
Expertise (know how; know why)
Transferable skills

Example: FH Campus Wien (continued)

Providing hybrid teaching formats or digital short formats can help positioning FH Campus Wien externally.

Digitalization also can help recruiting and employing international lecturers; new student markets can be reached more easily, and it greatly increases the potential for networking.

Gain creators supporting digital transformation included the provision of software solutions (e.g. conference licenses), hardware components in lecture halls, adapted regulations and guidelines and online formats for study information (e.g. online open house). Some service units at the FH Campus Wien have started to offer digital services, such as in the Teaching Support Center or Online Services.

Overall, the higher degree of flexibility has increased motivation among staff, which is conducive to organizing everyday life at the FH Campus Wien.

The workshop mentioned other *gain creators*, such as the increased flexibilization and individualization that is enabled by digitalization. For example, working processes become more independent of time and place.

It was mentioned that the FHCW leadership will need to encourage digital transformation in all facets and facilitate digital spaces (e.g. the online format Research & Development Café) to encourage informal exchanges and community building.

FHCW workshop results

The FHCW workshop helped the FHCW project team develop an action plan consisting of three main activities. These are:

1. designing a maturity model for incorporating digitalization in study programs,
2. a blueprint with activities and measures for the strategic field Digital Transformation and Social Change that is part of the FH Campus Wien strategy, and
3. a competence framework for digital outcomes and good practice for integrating digitalization in learning outcomes in a curriculum.

Gains (outputs)
Entrepreneurial mindsets   Entrepreneurship embedded in curriculum
Pains (obstacles)
Opportunity cost   Complexity   Lack of knowledge; unfamiliarity

Workshop results: an action plan

After running the workshop, the project team will need to draw conclusions from the discussions, summarizing the outcomes and communicating them with the participants.

It will then elaborate the outcomes further by developing an action plan that has a specific time line and mentions deliverables and resources needed.

The plan is focused on delivering on the chosen activities through the provision of assistance and solutions (gain creators, pain relievers) by the HEIs to relevant stakeholders.

The workshop outcomes are also facilitating the collection and analysis of information and data that inform the accompanying research and the quality assurance in the project. This also feeds into the next phase of the project – the Check phase (see below).

The time frame for carrying out these actions in the FHCW spanned June to December 2021 and involved several follow-up workshops and discussions with different internal stakeholders and external partners.

Example: NOVA IMS

The NOVA Information Management School (IMS), a faculty of NOVA University located in Lisbon (Portugal), set out to review the state of the art of the digital context of the NOVA IMS programs as well as the digital tools and strategies used in the learning process.

Its project produced the following suggestions related to its digital strategy:
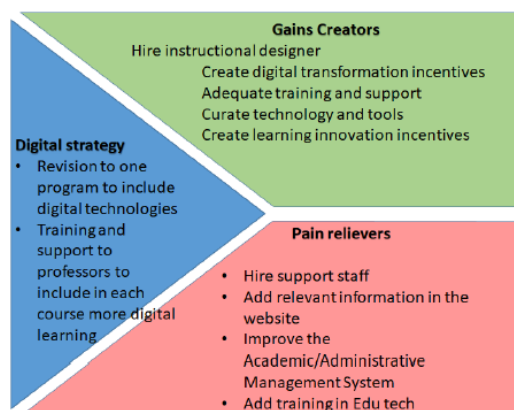
2.4 Intermediate stage (Check)

In this stage of the project, a check is made to assess the degree to which the project is delivering on its objectives.

Checking progress

After the 'Do' phase, the project has already taken shape and the first results of its implementation should be available. This is where the 'Check' phase starts.

The goals of this stage are:

- Monitor & evaluate progress
- Compare goals against actual results
- Reflect on outcomes, identify barriers & problem areas, unforeseen circumstances
- Discuss progress with stakeholders
- Revise the original action plan if it is deemed necessary

In the 'Check' phase, intermediate results are assessed. The project's lead partners check the project's progress on the basis of further discussions with project participants.

The first two items in the above list can partly be addressed on the basis of information that is synthesized in indicators (see below).

In any project, there are usually some key areas where project managers feel that the project's efficiency could be improved, or where the partners could have done something better.

Indicators

The key issue is to establish the extent to which the 'entrepreneurial agenda' has become further embedded in HEIs.

To monitor progress on this agenda, information has to be collected and some of that can be presented in the form of indicators.

BeyondScale experiences

The BeyondScale project plan foresaw that to check progress and discuss intermediate results, the project partners conduct a second workshop with their internal and/or external stakeholders.

The original plan was that the HEInnovate Self-Assessment Tool would be used a second time in this workshop to determine the extent to which the project managed to realize the HEI's ambitions to become more entrepreneurial.

The BeyondScale workshops

The experiences of the BeyondScale project partners in using the HEInnovate self-assessment tool in their first workshops (see previous subsection) indicated that the majority saw no or only very little added value in using the tool for another time. The partners felt that the potential benefits of its use were too low compared to the costs of running the exercise for another time.

In addition to this, the Covid pandemic meant that the BeyondScale partners' original project plans could not be realized in the way that was foreseen. The project plans needed revision.

The BeyondScale partners were given the option to decide for themselves whether to use the HEInnovate tool again in a second workshop or to use the workshop as an occasion to reflect on their projects' progress.

> **What are indicators?**
>
> Indicators:
>
> - Measure progress in realising performance (or, at least: change) against a target to evaluate the effect of policy actions and plans.
> - Provide information to the project team (i.e. the responsible organisation), the HEI, policymakers, and internal or external stakeholders.
> - Describe, show trends, communicate the results of implementing actions in a simplified way.
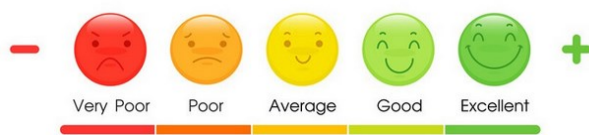
To monitor progress, use can be made of a simple process structure (see Figure 11). In this structure, a process is split up into four major elements: inputs, activities, outputs and outcomes. For each of these, indicators can be selected to assess the state of the project. The figure provides some examples of indicators – in this case, indicators for projects linked to the HEInnovate dimension Entrepreneurial Teaching & Learning. The bottom part of the figure shows the areas on which the 'Check' phase is concentrating.

Figure 11: A process model, including progress indicators and assessment areas
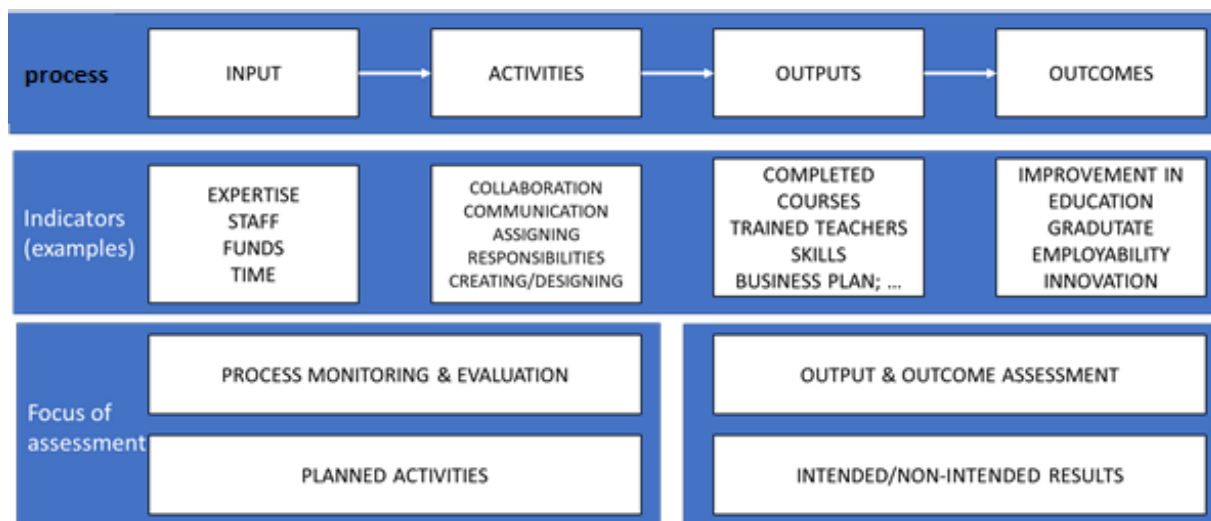
Below, we define the indicator types and discuss how to use them in the 'check' phase. We also provide some more examples of indicators.

Inputs	Examples of input indicators
Inputs refer to the resources dedicated to the project. These mainly include time and money. A distinction can be made between resources used by the HEI (or its units) and the resources provided by external stakeholders. Besides time and money, one could also think of immaterial inputs such as knowledge, expertise and support or hardware such as buildings, IT-Infrastructure and legislation. Input indicators address the extent to which these inputs have been used so	- Time until project completion - Time spent on the specific activities that are part of the project; - Number of dedicated staff involved in the project; and whether that number has changed during the project's duration; - Financial resources dedicated to the project and whether the project budget has changed (depleted; augmented) during the project's duration; resources spent (by the respective partners) on activities so far.

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far. These indicators also allow checking how much time and other resources are still available for the project.	

Activities
 	
The activities carried out during the project depend on the actual goals of the project. While most projects are special regards their goals, most projects pushing the entrepreneurial agenda have in common that they require partners (internal; external to the HEI) to <u>collaborate</u> in the activities. The partners have to work together to deliver on the project's objectives. For instance: creating entrepreneurial modules, training teachers, or helping students set up a business plan. To ensure such a collaboration, partners will have to meet, negotiate, agree on who does what, invest time and financial resources, exchange information and test their intermediate outputs.
 	
For many of the progress indicators mentioned on the right hand-side, objective quantitative indicators do not exist. To cover some of the activity areas, information can be collected among the project participants asking for their perceptions, opinions and qualitative assessments of the issues under review.
 	
To collect this qualitative information, a five-point Likert scale can be used, as shown in the following example (and the picture on the right):
 	
• The general information, progress, and project issues were communicated among the partners in an effective and timely manner:
    1: not at all
    2: to a little extent/degree
    3: to a moderate extent/degree
    4: to a great extent/degree
    5: to a very great extent/degree
	Examples of progress indicators related to activities
	
	- The number of meetings organised
	- The number of participants in those meetings
	- Whether the project has managed to extend its outreach (number of participants in the network/collaboration)
	- The degree to which the general information, progress, and project issues were communicated among the partners in an effective and timely manner
	- The degree to which those meetings and discussions between partners have contributed to achieving the project's intended results
	- The degree to which the roles and responsibilities for each partner in the project were divided and communicated
	- Whether external project partners have provided technical assistance or expertise
	- Whether the initial time planning for delivering on the outputs of the project is realistic
	- Whether the scope and objectives of the project were realistic
	- Whether the deliverables (intermediate outcomes) that were specified as part of the project plan have been produced
	- Communication to ensure the collaboration success the communication channels should be defined and established, communication groups should be formed

Assessing inputs and activities – Process monitoring and evaluation The reflection of inputs and activities thus essentially looks at the things that have already	*On resources* Here it can be questioned, for example, whether the planned activities can also be implemented with the planned resources. For example, can it be determined that

been contributed and undertaken. It is important to determine how much effort was put into the activities, e.g., relating to resources and time spent.

The project timetable

Process monitoring can be used to review the project timetable:

- Were the envisaged milestones achieved within the planned time?
- Which subtasks are delayed?
- What is causing these delays?
- Does the delay possibly endanger that the project goal cannot be achieved on time?
- What measures can be taken to make up for the delay?

About delays

- If assessments show a difference between the initial planning and the project's current state, it may be necessary to identify the causes of the deviation and adjust the project plan accordingly. What factors (individual, institutional, legislative, in the HEI's environment) have contributed to this?
- What activities can help to resolve the situation?
- Does the project goal perhaps need to be more realistic, i.e. adapted to the circumstances?

a selected activity requires significantly more or fewer resources than planned? Then it makes sense to find out the reason for this and, if possible, redesign the activity.

- Determine whether sufficient resources are generally available to complete the project objectives.
- Determine whether the resources currently available are sufficient to achieve the project's objectives.
- Determine how much input has already been used for the activities and whether the consumption aligns with the planning.

On delays

- Determine whether the sub-activities of the project are still on schedule or whether any delays have occurred.
- Determine whether these delays have an impact on the achievement of the project objective.
- Why is there a deviation between the plan and the current processing status?
- Does it make sense to allocate additional funds to the project?

Outputs

Outputs are the products and services which result from the project. They may also include other unplanned changes that result from the intervention and are relevant to achieving the outcomes. Depending on the project goals, the intended outputs will differ in their definition, nature and degree of exactness. The question is whether the intended outputs can be clearly defined and specified as measurable quantitative outputs.

Many projects that aim to push the entrepreneurial agenda in higher education have in common that they intend to create

Some examples of progress indicators for assessing the outputs

Below are some examples of indicators for the HEInnovate dimensions 'Entrepreneurial Teaching & Learning' and 'Knowledge Exchange and Collaboration':

- The number of new (or improved) education modules that focus on entrepreneurship & entrepreneurial skills
- How many students have signed up for these modules or completed such modules
- Training events organized by the HEI to introduce their lecturers in pedagogies that support entrepreneurship in education
- The number of contacts with external partners

entrepreneurial education modules, train teachers, help students set up a business plan.

For example, projects aiming at strengthening entrepreneurial teaching and learning in the institution could produce as an output an increase in the number of courses that include an entrepreneurial component, or an increase in the number of teachers participating in entrepreneurship training.

To measure outputs, quantitative as well as qualitative indicators can be used. Quantitative indicators could include the number of courses or modules developed in the project.

However, assessing or evaluating the learning outcomes of students and staff is a more difficult undertaking. In these cases, one may have to resort to qualitative indicators (such as the above) or consider EPIC or Entrecomp (see Chapter 1).

-   The number of contracts signed between the HEI (or some of its departments) and companies or not-for-profit organisations
-   Turnover in contracts and joint projects undertaken with external partners
-   The number of spin-offs and start-up companies s created by students and staff
-   Support services or technologies developed by the HEI
-   Advice provided by the HEI to external partners

SMART Indicators

S   SPECIFIC

M   MEASURABLE

A   ATTAINABLE

R   RELEVANT

T   TIME-BOUND

Outcomes & outcome evaluation

Outcomes are the likely or achieved short-term and medium-term effects of the project's outputs. While outputs are often more tangible and direct, the project's outcomes are usually less tangible, with 'softer' effects unfolding some time after the outputs had been produced.

Outcomes relate to the wider goals or effects of the projects. Outcomes reflect the longer-term effects on stakeholders or targets groups of the actions and whether the outputs improve the target group's economic well-being, level of information, education, living standards, awareness, or capacities. As target groups, one could also think of region stakeholders situated in the environment of the higher education institution.

Outcomes, however, are not per se positive or unfold as planned. Rather, there can be positive and negative, primary and secondary long-term effects resulting from a project. Some are felt directly, others indirectly; some outcomes are intended, while others are unintended.

Examples of outcome indicators

Below are some examples of outcome indicators for the HEInnovate dimension 'Knowledge Exchange and Collaboration':

-   Satisfaction with the impact of the project's activities & outputs on the institution
-   Satisfaction with the impact of the project's activities & outputs on the target groups and relevant stakeholders
-   Increase in the number of start-up companies in the close/regional environment of the HEI
-   Increase in the number of students finding adequate employment shortly upon graduation
-   more students venturing into their businesses upon graduation
-   more students experiencing a shorter time to find a first adequate job

To measure outcomes, quantitative as well as qualitative indicators can be used.

For assessing or evaluating outcomes, one may have to resort to qualitative indicators that capture the opinions or perceptions of people by means of their scores on a five-point Likert scale.

Non-intended effects are project results that were not foreseen in the project planning but have resulted from the intervention or the measures implemented. For example, integrating entrepreneurial skills into the curriculum can contribute to the fact that the teaching of subject-specific content takes a back seat.

Evaluative questions

In the Check phase of the project there should be room for more reflective, evaluation-type questions, such as:

- Which outcomes were expected to result from the project?
- Have they been realized?
- What evidence (indicators, narratives, or other measures) can be used to measure the outcomes?
- Which factors do you hold responsible for the success of the project?
- Were there any unintended outcomes?
- How do you explain the success of your project?
- What recommendations or best practices can you derive from it?
- Is there also a possible need to fundamentally review and adjust the assumptions on which the project is based?

For the assessment of results, the existence of a reference value may be needed. This means that it can be checked whether the planned results have been produced or how a characteristic of the HEI has changed throughout the project.

This means that the situation at the beginning of the project is usually compared with the current state.

This comes close to the kind of self-assessment statements used in tools such as HEInnovate.

For example, in entrepreneurial teaching and learning projects, one can ask whether strengthening the students' entrepreneurial skills has improved their chances in the labour market.

For this, the situation at the beginning of the project is usually compared with the current state.

Examples of evaluation-type questions

Evaluative questions that can be asked to project participants in a survey:

- Do the project's outcomes correspond to the planning?
- What changes have occurred since the beginning of the activity in terms of outputs and outcomes of the project?
- Does the change correspond to the expectations or assumptions on which the planned measures in the project are based?
- If so, If no: How do you explain the fact that the expected impact has not (yet) been achieved?
- If not, what measures are needed to bring about the planned impacts?

Both closed questions (e.g. multiple choice) and open questions can be used for this purpose. Again, to reduce the time needed to fill in a survey, the number and type of questions have to be chosen carefully.

2.5 Final stage (Act)

During the 'Act' phase, everything is arranged that is necessary to bring the project to a successful completion.

The key questions

For the final project phase, the following questions are on the table:

1. Reflection/evaluation: Have the project's aims been achieved?
2. Are we meeting stakeholder needs?
3. Efficiency and effectiveness (resources; time; people involved)
4. Can we detect any impacts? (indicators & Measures of success)
5. How to disseminate the project outcomes? (experiences, tools and outcomes)
6. Are there any new tasks/aims to be taken up in a follow up project?
7. Can the project's findings be applied elsewhere? Can other parts of the HEI also make use of the lessons learned?

The Act phase is also the time to perform a final evaluation of the project itself and finalizing the administrative paperwork for the sponsors of the project to settle the bills and dismantle the project team.

The BeyondScale deliverables: Reports, user stories, guidelines

Towards the end of the BeyondScale project, the original project plan was revisited to determine whether the outcomes have been achieved. The various results over the project period were collected, presented on the BeyondScale project website (https://www.beyondscale.eu/) and a final conference was organised to disseminate and discuss the results.

The following outcomes were produced in the course of the BeyondScale project:

- Webinars and Proceedings of meetings
- Country notes (institutional)
- Workshops & webinars
- User Stories (eight in total, by BeyondScale partners)
- Video & tutorial on the Value Proposition Canvas
- Guidelines on Peer Learning (by each BeyondScale partner)
- Buddy system (DigiBuddy - see below)
- Transversal Reports (i.e. two transnational reports) on Inbound, respectively Outbound activities
- Reports produced as part of BeyondScale's accompanying research (scoping report; literature study; papers; this booklet)
- Inspiration Fiches (see below)
- Building a network – a community of practice among HEIs

And when you're done…

Examples of activities in the Act phase include writing up the results of the project – usually in a final report.

Often, a part of the final phase is also to organise an event to celebrate what has been achieved (e.g., a conference, or a party) to present the project outcomes to a broader audience. To that event, the future users (say, stakeholders) of the results may be invited to learn about the project outcomes.

The **User stories** of the BeyondScale partners focused on their initiatives to become more entrepreneurial. In particular, the partners report on how they used the HEInnovate tool and the **Value Proposition Canvas**. This produced valuable insights in how the HEInnovate tool could be made (even) more useful when planning for change.

In several **webinars** held in the course of the project, the project partners shared the findings from their projects with a wider audience and discussed ways of making further progress. As such, the webinars provided an occasion for **peer learning** among the BeyondScale partners.

In their **guidelines notes**, written towards the end of the project, each of the BeyondScale partners reflected on their project activities. They once again described their objectives

But is work really finished?

A central question in the Act phase concerns when and where the project ends or whether the finalization of the project leads to the beginning of a new project – a *follow-up phase*.

Stakeholders (the *customers* in the Value Canvas terminology – see Figure 9, above) may expect to receive a product or service, while the project team assumes that it is building a prototype or pilot version to be used for scaling up or developing further.

So, what have we learned?

Reflecting on the various projects undertaken by the BeyondScale partners to achieve organisational change with the help of the HEInnovate tool, it has become apparent that implementing change (transformation) in higher education is a challenging task.

In section 1.6 above (*The transformation process*), it was observed that, for HEIs, taking the step from a self-assessment (or, more generally, a SWOT analysis) to the implementation of a set of actions for becoming more entrepreneurial is a challenging task.

From self-assessment to action

It is often unclear to those responsible for initiating change processes what interventions to consider and what solutions to implement for overcoming the obstacles and supporting that change.

This is where suggestions from others (i.e. HEIs, experts, academic literature) and good practices from elsewhere (e.g., from the HEInnovate platform) may be helpful.

To help project partners find 'buddies' to discuss the actions to consider in change processes a **Buddy System** was developed. This system allows representatives

However, building a more entrepreneurial culture is process that primarily requires

and how they involved the various internal and external stakeholders in their project.

More importantly, the **guidelines** note includes the contribution the project made to achieving the goals, that is: what was learned and what outcomes have been achieved?

Example: FH Campus Wien

It its guidelines document, the FH Campus Wien lists the following outcomes for its project related to *Digital Transformation and Capability*:

- A blueprint with activities and measures for the strategic field "digital transformation and social change" of the FH Campus Wien strategy 2020-25 was identified.
- The HEInnovate tool and the website for quality development of degree programs to foster digitalization with focus on extended possibilities of use were reflected.
- Several degree programs integrated learning outcomes and content related to digitalization in their curricula.
- An internal framework for learning outcomes for digital competences, which refers to the "Digital Competence Framework for Austria – DigComp 2.2 AT" was drafted.
- Many degree programs integrated a vast number of virtual courses of high quality in their curricula.
- Most curricula were transferred into the database "eCurriculum" of FH Campus Wien.
- A concept for a maturity model for digitalization in curricula was designed.
- A webinar about different topics related to digitalization at FH Campus Wien was hosted.

Dissemination

User stories, guidelines and other reports allow interested HEIs to learn from others' experiences and see how the HEInnovate tool and its resources can support change process towards becoming more entrepreneurial.

The DigiBuddy system

Digi Buddy is a web-based platform (https://www.digi-buddy.eu/) for HEIs seeking support and partners for collaboration and peer-learning when strengthening entrepreneurship in their institutions.

Through the DigiBuddy System HEIs can start engaging in peer-learning, exchanging experiences and discussing plans. The platform allows HEIs to contact other HEIs on the platform that also are interested to work on similar projects or tackle similar challenges.

DigiBuddy facilitates collaboration and networking, and possibly mentorship opportunities between HEIs.

the involvement of the HEI's stakeholders – both its internal stakeholders (e.g., students, teachers, researchers, support staff, managers) and its external stakeholders (e.g., regional business, alumni, employers, non-profits, authorities).

To inspire the discussion with stakeholders (e.g. in the Value Proposition workshops described above) and to feed the development of action plans, the BeyondScale project suggested the use of **Inspiration Fiches**.

The Inspiration Fiches provide evidence-based advice. They are Inspiration sheets ('cards'), containing a menu of potential challenges and related actions, barriers and interventions/ solutions.

The Inspiration fiches provide an overview of possible courses of action that HEIs can apply to achieve change in their institution. They provide basic information, but also point to additional sources of information and case studies. They address the following questions:

1. **Challenge/Goals** – Which goals should be achieved through the change process?
2. **Interventions** – What potential interventions can help achieve the goals?
3. **Inputs** – What inputs or resources are needed for this, and what special requirements must these inputs meet?
4. **Barriers & Solutions** – What problems can arise and what solutions can be found to overcome the potential obstacles?

The inspiration fiches aim to enhance the usefulness of the HEInnovate self-assessment tool, and support HEIs in deciding on an action plan that responds to the challenges that were identified by the institutions.

Find partners to create an entrepreneurial mindset and tackle challenges together

The Digi Buddy platform helps Higher Education Institutions to find matching institutional partners to exchange information & experiences and to establish collaborations that are beneficial for all partners

Register to find a Partner   Login

Inspiration Fiches

HEI practitioners and managers using the DigiBuddy system are provided with the opportunity to not only contact like-minded institutions/individuals, but also to access information on the basis of thematic clusters, and challenges through an "Inspiration Fiche".

This fiche is a piece of condensed information about strategies, policies and initiatives undertaken by HEIs to address the entrepreneurship and innovation agenda. The Fiche is based on (practical) HEInnovate & BeyondScale experiences and the academic literature on transformation processes in higher education.

An outline of the *Entrepreneurial Teaching and Learning Inspiration Fiche* is shown below (Figure 12).

There is a second Inspiration fiche on *Social Entrepreneurship* and supporting HEIs that wish to collaborate with the 'third (i.e. not-for-profit) sector.

The fiches provide a unique set of recommendations on how HEIs can use the HEInnovate approach to further their entrepreneurial agenda. They also provide narratives describing the outcomes, contribution and impact of the use and experimentation with HEInnovate in achieving the outcomes and objectives in each activity area.

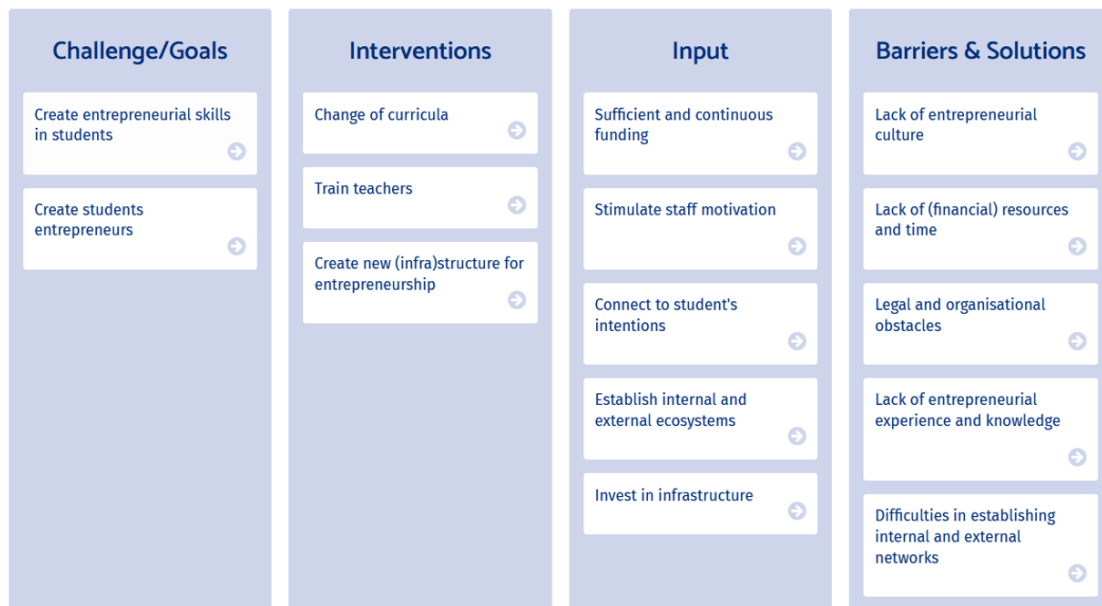Being a digital tool, the fiche links its users to the evidence underlying the keywords in the fiche.

For example, a user interested in the intervention "Centre for Entrepreneurship" will be provided with a pop-up window that includes a presentation or definition of such a centre and provides links to other issues that are related to implementing these centres, such as the resources and inputs, potential

The fiches condense knowledge on entrepreneurship into information-rich and inspiring keywords for some of the essential features of institutional change processes.

barriers and motivators, etc. In addition, the pop up-windows will include links to the most relevant publications underlying the evidence that is summarised in the texts.

Figure 12: Inspiration Fiche for the HEInnovate dimension "Supporting Entrepreneurial Teaching & Learning"

Challenge/Goals	Interventions	Input	Barriers & Solutions
Create entrepreneurial skills in students	Change of curricula	Sufficient and continuous funding	Lack of entrepreneurial culture
Create students entrepreneurs	Train teachers	Stimulate staff motivation	Lack of (financial) resources and time
	Create new (infra)structure for entrepreneurship	Connect to student's intentions	Legal and organisational obstacles
		Establish internal and external ecosystems	Lack of entrepreneurial experience and knowledge
		Invest in infrastructure	Difficulties in establishing internal and external networks

3. Enhancing the use and usefulness of HEInnovate

3.1 Introduction

Revisiting the purpose of HEInnovate and based on the experiences of the partners in the BeyondScale project, a number of recommendations can be drawn up on how the use and usability of the HEInnovate tool can be enhanced. However, before going into the recommendations and lessons learned, we have to reaffirm the opinion of the BeyondScale project partners that, as a self-reflection tool, HEInnovate is already a very useful instrument to support HEIs in identifying their strengths and weaknesses in the area of entrepreneurship and innovation. HEInnovate is very helpful to kick-off change processes in HEIs that wish to become more entrepreneurial and innovative.

The HEInnovate self-assessment statements are often the start of a discussion – the start of a *learning journey* – around the experiences and ways in which HEIs can become more entrepreneurial and transform themselves while undertaking this journey. In this journey, HEIs can learn from other institutions. And in the course of BeyondScale, this was certainly the case, despite the limitations due to Covid that prevented on-site visits. In BeyondScale, the project partners were able to select a buddy – a partner institution – to interact with during the project period.

In order to learn about the ways in which this transformation can take place, the users of the HEInnovate tool can get inspiration from the rich database of case studies and user experiences that is made available through the HEInnovate website. However, the experiences of BeyondScale partners in making use of these HEInnovate resources (i.e. the self-assessment statements, the case studies) suggested that a number of additions and enhancements to the tool can be made. We will now present these in the form of a number of challenges. For each of the challenges we will present a way of addressing it, based on the experiences in the BeyondScale project. In other words, BeyondScale can be seen as a *testbed* for finding ways of improving the HEInnovate tool.

3.2 Challenge 1: Translate awareness into action

One of the biggest lessons learned during the BeyondScale project is that HEIs often find it challenging to choose the actions to undertake when they wish to move from the current state they are in towards becoming a more entrepreneurial institution. The HEIs that have done a self-assessment realize that there are many actions that might be considered and that there are many examples of HEIs in the world that in one or another have managed to implement some of them. However, as shown from our literature review on the topic of Introducing Entrepreneurial Teaching & Learning in HEIs, there are several interventions, actions and strategies to consider and choosing the one that works for the institution is a great challenge.

Addressing this challenge is not a simple task, as each HEI in a way is unique, in the sense of being situated in a particular context and already having some experience in terms of embedding entrepreneurship in the activities (education, research, engagement) and support structures of the institution. In some parts of their institution the HEI already may have reached a particular level of entrepreneurial characteristics, while other parts (say, faculties, departments) may not. Therefore, a first step is building awareness of the state the institution is in – and for that HEInnovate is a useful instrument.

Starting a discussion in the institution on what steps to undertake could easily lead to a debate where too many options and interventions are suggested. Certainly, when the discussion would start from the full set of (eight) HEInnovate dimensions. To prevent this overload of dimensions and issues to consider, it pays to select one HEInnovate dimension (or two at most) and to sometimes go even further and select a particular course of action to achieve a goal – thus **f**ocussing on one particular set of interventions.

The BeyondScale partners found the choice for one dimension one of the most important pieces of advice when embarking on their organisational change project (say, their inbound, or outbound activity). This focus can help the stakeholders involved in the transformation process remain motivated and continue participating in the project, as they see a clear road ahead of them and they stay focused on the goals of project. It prevents the organisational change project from drowning in ambitions. A clear focus also makes it easier to align the activities undertaken in the project with the needs and demands of the stakeholders (e.g., the students, or the businesses and other external partners of the HEI).

Getting this clear focus on the HEInnovate dimension to concentrate on and the interventions to consider, however, requires that the institutions first learn about the demands of their stakeholders. Another important lesson learned in the BeyondScale project is that it pays off to make an investment in engaging the stakeholders in a focused debate on what they perceive to be the value proposition that the HEI can make in addressing their needs. This debate can be organised by means of a workshop where the value proposition canvas is placed in the centre. The Value Proposition Canvas distinguishes the pains perceived by the stakeholders, and it provides a structured debate on the ways these pains can be relieved, the gains that can be provided by the HEIs (i.e. their products and services), along with ways this can be done (by means of the gain creators). The value proposition canvas was well-received by the HEIs in the BeyondScale project – it helped structure the debate with their stakeholders involved in the (inbound and outbound) projects and it served as the start of an action plan, with inputs from the different partners in the project.

The preparation of such a workshop that makes use of the value proposition canvas is crucial. From the BeyondScale experience we learned that it helps to first collect the opinions and experiences of the different stakeholders and participants in the workshop. This can be done using the self-assessment statements provided by HEInnovate. However, the statements are not always easy for users to react to.

Firstly, because the HEInnovate self-reflection statements make use of terminology and concepts that are not always clear to the uninitiated (say, outsider). In particular, representatives from external stakeholder parties (e.g., business, non-profit sector) do not have the required profound prior information on the higher education institution to answer a statement let alone the *time* to invest in finding that information. This can lead to a high level of non-response, unreliable responses, or 'not applicable' responses.

Secondly, the statements relate to the HEI as a whole, while the respondent may not have the full picture and only be aware of her/his particular department or unit in the HEI. The statements are seen as too broad and not tailored to the individual institution. Despite of this, the statements are

inspiring for the organisers of a value proposition workshop – the statements can be seen as the start of the process of collecting information.

Thirdly, the statements are all in the shape of closed questions (requiring answers on a five-point scale), which is a challenging is there is no real benchmark. Scoring a 'five' on a statement would actually require a comparative case – an ideal case. But that does not always exist, so interpreting a score awarded is difficult.

The BeyondScale partners, therefore, in their preparation for the Value Canvas workshop discussions added their own questions to the HEInnovate questionnaire, often deciding to include more 'open questions', where information is sought on actual pains, gains and how (and why!) to address them. In particular, these additional questions were meant to collect information on practices and experiences related to their selected HEInnovate dimension. Often, this more qualitative information was found to be more useful than quantitative scores on a five-point scale given by survey participants. Without inviting the survey participants to articulate wishes, desires, pains, gains, ideas etc., one just gets a snapshot of the institution's present status (as perceived) and does not garner ideas for future development.

All of this leads to the recommendation that the HEInnovate tool can (and should) be made more flexible and useful for HEIs by means of adding questions and statements that are more tailored to the issue at hand and the particular stakeholder groups where information and opinions are to be found. In some cases, statements may also be deleted if they are felt to be less relevant for the issue (e.g., dimension and intervention) at hand. One should understand that the goal of HEInnovate is to start a discussion/dialogue in the HEI to initiate change processes. Whatever makes this goal become more within reach may need to be added to the tool. This also includes adding clarifications of terms (e.g. entrepreneurship) and examples to the HEInnovate tool.

3.3 Challenge 2: Identifying the relevant resources from the HEInnovate case studies, user stories and guidance notes

The BeyondScale partners often found it challenging to make sense of the large set of materials that was suggested to them after having completed the HEInnovate self-assessment questionnaire. They were often overwhelmed with the abundance of case studies, user stories, guidance notes, videos and other digital resources on the HEInnovate website.

Making the relevant selection from these resources is a tremendous challenge for leaders, policymakers, and advisors in higher education institutions. There is no simple or single best practice, because the differences between HEIs are quite large in terms of their degrees of freedom (autonomy; legal provisions), their experience (or maturity) in entrepreneurial activity, the culture and attitudes of their (academic & support) staff in the various disciplines, and – finally – their (managerial) capacity (i.e. expertise and resources).

The HEInnovate website currently provides a search menu with filters and the opportunity to search for keywords and expressions in the documents, so that users are provided with those documents that best match their information needs. However, for some users, accessing knowledge in this way is time-consuming, as they must sequentially study a set of case studies and extract the information they are after. Also, users interested in the practical interventions that may be considered when

implementing change processes will have to make a considerable effort to identify the possible interventions and decide on which interventions are relevant for them.

To address this challenge, the accompanying research that took place alongside the BeyondScale project made an effort to unlock the existing academic and HEInnovate resource base on entrepreneurship in higher education. And introduced the idea of 'Inspiration fiches', as a new tool to support action plans in higher education institutions. The fiches (akin to cards) provide a condensed overview of possible interventions, potential barriers and other aspects related to the change processes in higher education. They are more easily accessible to managers and practitioners in higher education who seek inspiration on how to push forward the entrepreneurial agenda in their institutions.

The inspiration fiches were made to enhance the usefulness of the HEInnovate self-assessment tool, and support HEIs in deciding on an action plan that responds to the challenges that were identified by the institutions. The fiches condense knowledge into information-rich and inspiring keywords for some of the essential features of institutional change processes. The fiches present the essential features of a change process within one of the HEInnovate dimensions (e.g., Entrepreneurial Teaching and Learning). They present (1) the typical challenges that motivate HEIs to engage in the selected HEInnovate dimension, (2) the typical interventions used by HEIs to respond to these challenges, (3) the inputs and resources HEIs employed to implement the interventions, and (4) the barriers that HEIs had to overcome during the change process, along with the solutions to overcome them. Thus, the Inspiration Fiches support the search process for HEIs that are starting on a transformation journey towards becoming more entrepreneurial in a particular HEInnovate dimension.

In addition, the BeyondScale partners felt there was little information available on the HEInnovate platform on the topic of social entrepreneurship. It was felt that there was a large focus on for profit entrepreneurship instead of initiatives and issues that involved working with (or for) the not-for-profit sector. To address this shortage, the accompanying research in BeyondScale produced an Inspiration fiche dedicated in particular to social entrepreneurship and the so-called Third Sector. This particular type of entrepreneurship may be added to the HEInnovate tool – either as a separate HEInnovate dimension or as part of its dimension 'Preparing and Supporting Entrepreneurs'.

3.4 Challenge 3: Learning from others

When having to decide on the actions to undertake for making the entrepreneurial transformation and what to keep in mind in terms of potential obstacles and facilitators to consider, it always makes sense to learn from other experiences. As mentioned above, for this, one can make use of the experiences of other HEIs, or of the academic literature and resources made available through the HEInnovate platform. However, for the BeyondScale partners one of the most valuable experiences was to be able to learn from other HEIs that are in the same situation and that are also interested in change processes. However, it is not only learning from others, but in particular learning with others. Exchanging experiences with other HEIs is seen as very valuable. Although such interaction these days can take place on-line, and can be enriched by tools such as Mural, there is an advantage of real in-person, face-to-face conversations. The Covid situation made this difficult, but despite this, the BeyondScale partners managed to start discussing common interests and approaches on the on-line platforms (Teams, Zoom).

A lesson learned is that trust between partners and knowing about each others' background and interests is conducive to the information exchange. Knowing the profile of your partners then is a good starting point. Such a profile can be made available on-line – using the digital tools and examples that are ever-present these days. As part of BeyondScale, a DigiBuddy system was constructed – as a pilot to test out how representatives from HEIs could be assisted in finding other HEIs (say, buddies) with which they can exchange information, experiences and discuss potential actions to undertake when trying to become more entrepreneurial. The DigiBuddy tool so far was tested only on the selected set of BeyondScale partners, and further enhancements may be made to the tool before it can be scaled-up.

3.5 Challenge 4: Assessing progress on the transformation journey

All BeyondScale partners were involved in their own inbound and outbound change projects. They started with applying the HEInnovate self-assessment tool (including additional questions) and then proceeded with a Value Proposition workshop and the actions agreed after that. In further workshops and activities, the interventions suggested in the VP workshop were followed up.

One of the biggest challenges in this transformation exercise was to keep all interested stakeholders motivated, deliver on the agreed plans and make sure sufficient progress was made. Projects always are confronted with unexpected events (e.g., Covid), which call for further action, investing additional resources (e.g., time of staff). Having a sufficiently detailed project plan is always a sine-qua-non, and this usually is in place. However, the project leaders in charge of institutional change projects such as the ones undertaken as part of BeyondScale often found it difficult to assess the extent to which their actions had contributed to the wished-for objectives or whether the project was on track.

Checking progress and assessing impact of institutional change processes is a big challenge in HEIs. This is also one of the reasons that in the HEInnovate resource base (e.g., its case studies) there are relatively few materials devoted to the HEInnovate dimension of *Measuring Impact*.

Addressing this challenge was also something that the BeyondScale partners found difficult. As part of the BeyondScale activities, a suggestion was made to make use of tailor-made indicators and qualitative assessments for assessing where the project is and whether it has made a difference. A short guidance note on indicators was made available to the BeyondScale partners to inspire their use of potential progress indicators and their possible application. The BeyondScale partners were encouraged to use this guidance note to measure progress and performance in their follow-up workshops. However, many partners were quite hesitant to use the indicators, because of the work involved and the unfamiliarity with the subject. The time period for the projects in many cases also was too short to already expect very clear outcomes.

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