A5.4, O1: A future model for transnational challenge-based innovation support

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Introduction

At the Gothenburg Summit in 2017, EU leaders outlined a vision for education and culture that set in motion a pilot call under the auspices of the Erasmus+ Programme, for the formation of 'European Universities' as 'transnational alliances that will become the universities of the future, promoting European values and identity, and revolutionizing the quality and competitiveness of European higher education'. [1]

The European Universities Initiative focuses on the EU's ambitions to build a European Education Area and therefore has student education at its heart.

> '*…strengthening strategic partnerships across the EU between higher education institutions and encouraging the emergence by 2024 of some twenty 'European Universities', consisting in bottom-up networks of universities across the EU which will enable students to obtain a degree by combining studies in several EU countries and contribute to the international competitiveness of European universities*'.

The call stipulated that each alliance would:

- include partners from all types of higher education institution and cover a broad geographic scope across Europe
- be based upon a co-envisioned long-term strategy focussed on sustainability, excellence and European values
- offer student-centred curricula jointly delivered across inter-university campuses, where diverse student bodies can build their own programmes and experience mobility at all levels of study
- adopt a challenge-based approach according to which students, academics and external partners can cooperate in inter-disciplinary teams to tackle the biggest issues facing Europe today

The European Consortium of Innovative Universities (ECIU) was founded in 1997 as an alliance of entrepreneurial universities dedicated to the development of an innovative culture in their institutions, and to act as catalysts for innovation in industry and society at large. Strongly committed to regional development and already embarked on trans-regional collaboration based on mutual trust and willingness to co-align many activities, ECIU was predestined to be a pioneer in the European Universities initiative and was among the first 17 pilots to be funded.

In the proposal that was accepted for funding 'ECIU-University', ECIU commits to founding a European University by 2025 based on the current collaboration. In the current project ECIU-University, true to the DNA of its Members, the university role supporting innovation eco-systems is brought to the fore. This means in the case of the development of an ECIU-University, that challenge-based learning is linked to challenge-based research and challenge-based innovation and in such a way that the university contributes to regional socio-economic development.

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[1] https://ec.europa.eu/education/education-in-the-eu/european-education-area/european-universities-initiative_en

In October 2020, the Board of ECIU adopted the ECIU Vision 2030 that sets out the embodiment of ECIU as a European university with the Mission:

> *ECIU University is an agile, open agora at the European level for solving multi-disciplinary societal challenges, doing research, and learning for life. We create an invigorating model of a true European University for the benefit of European society.*

The vision is to establish "a European-wide ecosystem based upon open and inclusive collaboration connecting societal stakeholders, researchers, and learners to provide European answers to future societal challenges. We create a playground for solving multi-disciplinary challenges in entrepreneurial, innovative ways and provide personalized learning and career opportunities for life at the European level, enabled by a novel university model based upon co-creation."

Addressing the so called 'third mission' of a university, i.e. services to society beyond research and teaching, is a complex topic within any individual university due to competition for resources and the the freedom to act given to academics, and the corporate interest of the university and entities (such as institutes within it). Universities are acquire status and are ranked predominately through judgement of the quality of research performed by individuals; the research ranking is a determining factor for how attractive the university is to students. Those that fund universities, whether regional or national bodies, have a desire to see manifestations of societal engagement. This leads to the sometimes conflicting views on 'what are universities for'. In 1963, the Robbins Report[2] gave this as:

> *"Instruction in skills; the promotion of the general powers of the mind so as to produce not mere specialists, but rather cultivated men and women; to maintain research in balance with teaching, since teaching should not be separated from the advancement of learning and the search for truth; and to transmit a common culture and common standards of citizenship."*

By 2000, perceptions had shifted to seeing universities as contributors to the economy[3]:

> *Our universities are not just creators of knowledge, trainers of minds and transmitters of culture, but can also be major agents of economic growth, responding to the influences of globalization and new technologies, and the need to interact with businesses.*
>
> *The challenge for them is to stimulate and facilitate the increased transfer of knowledge to business and society, across all sectors of the economy, while improving the quality of teaching and research."*

In more recent years, universities have come to be measured according to the impact they can achieve, not just in economic terms. For example, the The Times Higher Education World Universitiy Rankings now measure contribution to UN SDGs4. Other measures look at the university's ability to deliver social mobility and other contributions to societal needs.

However the question 'What are universities are for?' is answered by the universities themselves, there is plenty of evidence that they are a crucial component of successful innovation eco-systems and therefore to regional development leading to the development of the triple helix model of innovation which underpins so much of policy making.[5] The triple helix has now been superseded by the quadruple helix which adds the connection to civil society and media, an approach used by the European Commission.

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2 Report of the Committee on Higher Education appointed by the (UK) Prime Minister under the Chairmanship of Lord Robbins 'The Robbins Report' 1963

3 Excellence and Opportunity: a science and innovation policy for the 21st century, (UK) HM Government White Paper 2000

4 https://www.timeshighereducation.com/impactrankings#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/undefined

5 Etzkowitz, Henry; Leydesdorff, Loet (1995-01-01). "The Triple Helix -- University-Industry-Government Relations: A Laboratory for Knowledge Based Economic Development". Rochester, NY. SSRN 2480085

ECIU members identify themselves as universities that embrace the third mission role and that have pioneered many of measures now considered standard practice: encouragement of entrepreneurship and co-creation; facilitation of relations to society and a commitment to regional development and the needs of society. Each ECIU member has made its own journey, evolving according to the priorities of their regions, taking different approaches, but all regard this to be a priority. With the vision and mission to establish the ECIU University, ECIU Members seek to continue the journey together.

It is now expected of any university that entrepreneurship and innovation support measures are addressed. It follows then, that this is equally true for a European University. Therefore, the formation of the ECIU-University must also address this. In the context of the ECIU-University foundation supported by Erasmus, this is initially being done through the prism of a challenge-based approach, with initially a focus on UNSDG11 and connectivity between regions in support of sharing good practice expressed in the ECIU mission (as stated above) and the vision,

'We believe in a European-wide ecosystem based upon open and inclusive collaboration connecting societal stakeholders, researchers, and learners to provide European answers to future societal challenges. We create a playground for solving multi-disciplinary challenges in entrepreneurial, innovative ways and provide personalized learning and career opportunities for life at the European level, enabled by a novel university model based upon co-creation.'

The ECIU-University project proposed to create three "Innovation Hubs" in Linköping, Hamburg, and Barcelona, for the engagement of stakeholders, for the identification of the challenges and for the valorisation of the results arising from the challenges.

The three Innovation Hub teams have discussed and debated with great intensity how to approach the idea of an innovation hub - how to relate this to both the need to support the development of ECIU-University and to add value to each Member University.

The idea of an 'innovation hub' and its rationale

The notional idea of an innovation hub expressed in the project description is "They consist in physical/virtual environments, designed to support members in generating challenges and following-up on results at their premises, i.e. by providing experts on diverse stakeholders' engagement to identify the challenge (facilitators)."

Since innovation is based on aggregation of knowledge from different sources, a useful topic to focus would be on how to facilitate collaboration with a network of universities and societal stakeholders and thereby inter-regional collaboration. Challenge-based innovation ultimately means configuring optimal access to sources of expertise and forming partnerships to address the particular challenge in question, recognizing that some of the competencies needed may not fall into the category of academic research or education. Universities are part of the innovation eco-system, which through for example, technology transfer activities and start-ups associated with research groups at the university, play a key role in nurturing new opportunities. Innovation hubs are a form of community building.

Therefore, as a key building block for the implementation of ECIU-University, the capability to deliver innovation–co-creation services collectively as a network is crucial to its ability to act corporately.

The 'outside in' perspective

Co-creation implies collaboration and collaboration that drives innovation invariably means involvement of different entities and persona. Therefore, when considering the topic of innovation, it is essential to consider the perspective of external stakeholders or *persona*. What are their needs and incentives? What provision is need for them to connect? The following describe some *persona* that may be encountered, their interests and concerns:

Regional SME

The founder of this SME of about 50 employees worries about the future of her business. She has a hard time keeping track of all new technologies and social sciences, wants to apply them in his business to stay ahead of the competition, but she does not regard her company as being high tech or a front runner. She looks at the university as a source of independent knowledge but has no academic background and does not feel confident to knock on the door of this bastion of very smart people. She is not interested in long-term research. However, she does, recognize that she needs to step up in the knowledge base of the company and is looking to see what support she can get from the university.

Corporates

Corporates are generally sophisticated in their management structures and procedures well but can be as complex as universities to approach. Local branches act under the supervision of the corporate management, but still maintain some 'couleur locale'. There is a shared vision on long term R&D and the corporate recognises the need and added value of close cooperation with academia. The corporate has both international and national dedicated capacity to establish and maintain relationships with academia, but since there are so many universities to choose from and maintaining relationships is time consuming, the corporate concentrates on a subset. Often this is done through bi-lateral relations with a particular academic or research team, but many now see the benefit of working across disciplines and departments. Facilitation in streamlining these approaches is much appreciated. Equally, university management these days is keen to promote longer term relations with specific corporates. Tension between the open access to knowledge academia pursues and the need for recognition through publishing, contra the business need to maintain competitive advantage by keeping knowledge out of sight from competition can be an issue.

Through their need for complex management systems, large corporates find it challenging to create an environment in which creativity thrives and therefore increasingly look to harness the agile and dedicated culture of start-ups and solutions for niches they develop. The corporate is a bit apprehensive: will the start-up bypass us in some niche markets? Can we both learn and also incorporate knowledge by acquiring start-ups?

High tech start-up company

The high tech start-up has its roots in the university. The founders are graduates or researchers who want to bring their knowledge to the market. They can enrol in special programs run by the university support functions to enhance the chances of success. Still, there is insecurity. Starting a company demands time and resources creating and managing a team, securing funding, marketing, etc. These are not competencies that were the first interests of the founders, who are driven by their technological skills and interests. Will they be able to keep up with all cutting edge knowledge they were used to acquiring in their academic environment? The start-up acknowledges the need of cooperation with academia and partnerships but are fearful of losing control and unsure of how to manage the relationships.

Investors

Investors are always actively scouting new business opportunities. The academic world is a source of interesting leads, but it is hard to get access to both the university and the start-up community.

Regional government

The regional government is proud of 'their' university. It makes the region attractive for companies and citizens. Students give a vibe to the region like nothing else. And the university and companies attract highly educated citizens. But there is competition between regions. Everyone aims for the same target groups. How can we engage the university in our common goals? In the end, the university does seem to focus on education and research, more than on valorisation when things are getting rough.

Innovation hubs as means to connect ECIU-members

Each university is a complex system. Cooperation of between universities is even more complex, society outside the university is even more complex. This complexity arises partly because an essential component in collaboration is trust and trust depends on personal rather than contractual relationships. It stands therefore that at the core of any innovation, established relationships in the region or with long established partners, will prevail. In looking at the concept of an innovation hub, which ultimately is some sort of point of contact for people, the question is how to act as a facilitator to enhance these relationships do not replace them. The principle of subsidiarity is understood to prevail. However, regular contact, sharing of experience and thereby the trusting relationships that are established between people is intrinsic to what ECIU has achieved as a network thus far and will continue to develop as ECIU-U. It is, however, essential that measures developed do not hinder local activities, disturb existing relations, but above all are seen as being worthwhile and of practical use.

Various options on how to move forward on developing the concept of innovation hub so that it achieves something that lays the foundation for a sustainable European University approach, while providing direct incentives to do something now, were considered. One line of exploration was for each Innovation Hub to establish some form of innovation activity based on a common regional interest that could be a basis for collaboration and from this to work out more general mechanisms for setting up an ECIU-based approach. This approach was abandoned because of the resources and time needed to set up a project.

Instead, the idea emerged to explore three forms of an Innovation Hub:

1. Sharing routes to valorisation – to be assessed by IH North led by Linköping
2. Providing a common connection point for third parties – to be assessed by IH Mid led by Hamburg
3. Linking to challenge-based learning – to be assessed by IH South led by Barcelona

Each of these is presented in the following sections. They are presented as concepts that could be developed not as alternatives.

ECIU Innovation Hub North – Sharing Routes to Valorisation

The ECIU universities generate a huge amount of knowledge with potential to make impact in society. There are various routes for such valorisation, both commercial and non-commercial. The most straightforward solution is available when the research project is based on a regional challenge (societal or industrial), since at least one potential user is involved already from the beginning. The individual universities have set up organisations to handle both valorisation in this way and for the cases where the path to valorisation is not obvious from the beginning. These organisations have limited resources and direct access to networks, and the rationale for the innovation hubs is to give the individual universities access to resources and networks from the other member universities when such cooperation and sharing add value in an efficient.

Synergies are expected in cases like:

- There are no potential users close (geographically or otherwise) to the university where the knowledge is generated, but where other member universities have contact with such users.
- The knowledge has been implemented in a local context, but where there is also potential for upscaling.
- The generated knowledge does not provide a complete offer or solution, but where the addition of knowledge from another university provides the parts which are missing.
- The knowledge for valorisation is based on cooperative research form more than one university

Each university will of course work alone in their respective regional context when this is sufficient. The innovation hubs will not be a new centralised organisation with monopoly ambitions. As of now, there is no systematic way of extracting synergies as described above, even though common valorisation paths are already pursued, but only on an *ad hoc* basis.

The Destination

The basic idea of an innovation hub is that it should be one entry point for project members who have identified the potential for adding value to their project results by including other ECIU universities. The innovation hub will provide the following functions:

- *Capture.* The hub will ensure that there is a sufficient flow of project results where common valorisation paths may be beneficial to obtain maximal impact in an efficient way. The hub will not only be a one-stop service counter for projects, but will also actively look for opportunities in a proactive way.
- *Evaluation and prioritization*. The hub will evaluate both the potential for implementation of project results, and if it is worth the effort to involve partner universities. With limited resources, a prioritization will most likely be required.
- *Matchmaking*. The hub will provide matchmaking services between the different members of the hub, and through them also the various Local Platform Arenas. In a fully developed scheme this will also involve ECIU members outside the hub.

- *Financial support*. The hub will be a node for distributing financial support for cooperation through the scheme of Transnational Innovation Vouchers (TIV), as piloted in WP 5.4.1.
- *Cooperation framework*. The hub will provide a cooperation framework for the partners. This will include, but not be limited to, providing relevant templates for cooperation agreement.

Challenges for implementation

The support systems for valorisation are organised in different ways at different universities, which is not a problem *per se*, but transparency and communication will of course be required.

Most universities are organised in similar ways for commercial exploitation, where centralised TTOs have been set up for this task. The TTOs are typically profit-driven entities and do not work with non-commercial valorisation.

Support for non-commercial valorisation is not set up in the same clear way as the TTOs, and is sometimes decentralised within the universities to faculties, departments, or excellence centres, which makes cooperation more difficult.

It is not a trivial task to put together the cooperation framework, not only because the different universities have different agendas and work under different conditions, but also because a variety of other partners such as SEMs, multinational corporations, authorities, NGOs, etc., may be involved.

IPR is handled in different ways at different universities, partly due to differences in national legislation. More specifically are employees, PhD students and students treated differently.

Comparing and contrasting current structures

Kaunas University of Technology (KTU)

Founded in 1922, Kaunas University of Technology is a leading Lithuanian university providing comprehensive research-based studies at international level and closely cooperating with business. KTU is ranked among the top 2,7% of world universities (QS World University rankings 2016/2017) and Lithuania's no. 1 technical university. KTU is a flagman in implementing an ambitious, up-to-date study model, which successfully meets the expectations of the students and the labour market. In addition to providing globally-recognised studies, KTU aims to develop and transfer knowledge and innovative technologies for sustainable development nationally and internationally, develop innovations and generate an open creative environment which inspires talents and leaders. By integrating education, research and business, KTU focuses its activities to enhance the quality of life and accelerate of statehood development. One of KTU's key priorities is to maintain synergy with local businesses. Hence, KTU provides support to solve real-life problems, and contributes to 70% of all R&D provided by Lithuanian universities for business and industry. KTU is also the founder of two of the Lithuanian innovation valleys (Santaka and Nemunas) and provides a specialised module in technology entrepreneurship. Aiming to respond to constantly changing needs of students and academic community, KTU established a Faculty Development Center EDU_Lab in 2014. All the years, EDU_Lab has been organizing qualification courses and seminars for educators and specialists of socio-educational work. EDU_Lab team is a group of dedicated KTU educators

who cooperate with and learn from the best international examples (e.g. Aalborg University, Leiden University, etc.) and share this experience in their training programs. At EDU_Lab KTU develops and implements the system of modern didactic competences, encourages faculty to select and apply relevant study methods as KTU believes in “a different” teaching and learning philosophy in line with up-to-date educational trends.

KTU has joined this alliance as a response to its strategic objectives to share the commitment to develop high quality educational practices which promote innovation and the pursuit of excellence in teaching, learning and research. KTU has a specific and continuous interest and is dedicated to seeking out creative, learning-centred and future-focused teaching approaches that are supported by the upcoming digitalisation agenda.The engagement in this alliance is consistent with and corresponds to the University’s vision and strategic directions. The University’s vision for its development and value preposition is embedded into studies, research and industry-and city-cooperation activities and relies on the five pillars, namely interdisciplinarity of knowledge, technology and enabling environment, innovations, expertness of research leaders and inspiring teachers, modern didactics and internationalisation. The Universities strategy focuses on the strengthening KTU’s responsibility to the society and the country, towards consolidating its activities for the improvement of human quality of life and acceleration of the statehood development. Furthermore, the objectives and planned activities of the alliance both directly and indirectly contribute to the current advancements in East Europe and are likely to be synergetic. These developments reflect changes in fields of study and research are organised and new didactic approaches are introduced. In this regard, KTU is a national and Baltic region’s flagman in implementing an ambitious, up-to-date study model and didactic methods that successfully meet the expectations of the students, the academic staff and the labour market. Both activities KTU's Faculty Development Center EDU_Lab, where new didactics models are developed and introduced, and the study model is based on the best global innovative teaching and learning practices, including some from the alliance’s partners. For instance, the breakthrough principles of the new study model include a competence-based curriculum grounded on the integration of the T and π shaped competences, product development project, joint projects with industry solving real-life issues, and the interdisciplinary approach.

Linköping University (LiU)

Linköping University is one of the larger academic institutions in Sweden. With 32,000 students, 1,200 research students, 300 full professors and 4,000 employees, Linköping University is Sweden’s fifth largest university and stands at position 28 among the world’s 50 best young universities in the latest ranking by the prestigious QS World University Rankings. Linköping University is ranked to be Sweden’s foremost University in respect to societal engagement and impact (according to the Swedish National Innovation Agency, Vinnova), producing the highest number of Sweden’s most innovative spinouts during the last decade. In only three decades, LiU has become renowned for its innovative educational spirit, for its stated ambition to foster cross-disciplinary cooperation, and for its ability to involve in fruitful interaction with surrounding society. Scientific relevance and societal needs are the dual criteria the university explicitly has set for its strategic initiatives. With a stronghold in applied research, and with educational programmes mainly focusing on professional degrees such as engineering, medicine, management and teaching, an ongoing dialog with industry and society has been pivotal for success.

The task of Linköping University is to create, disseminate and enable society to use knowledge, based on a democratic worldview and an academic tradition. Our goals are to create and disseminate research with international impact, attract and bring to graduation high-quality students and postgraduates, and contribute to societal development through a stronger collaboration with the society around us.

After extensive dialogue within the university, five strategic areas have been selected for priority: a sound set of core values, the digital transformation, lifelong learning, increased knowledge utilisation, and sustainable development. The operational plan for the university specifies several tasks that are to contribute to LiU continuing to deliver the highest quality results within education and research, while improving operations and increasing efficiency.

For LiU, the knowledge triangle and triple helix concepts are natural parts of everyday life. Both in education and in research, collaboration with the surrounding society occurs naturally and in unconstrained forms. Collaboration gives the education links to the prospective labor market, strengthens the relevance of the research and facilitates the utilization of knowledge to society. As a result of the above, the majority of LiU's good examples of collaboration have been developed in LiU's research and teaching environments -and historically without central strategies and guidelines. At the same time, the increasing competition for students, teachers and research funds, as well as the international trend regarding the impact of research, mean that LiU cannot rest in its already good results in the area, but must be able to further advance its positions.

University of Stavanger (UiS)

The University of Stavanger was established in 2004. It is situated on the south-west coast of Norway in the dynamic and international urban region of Stavanger with some 350000 inhabitants. The university offers a broad variety of academic disciplines such as education, health sciences, engineering, science, technology, performing arts and social sciences. With around 12 000 students and 1 700 staff, the university has grown rapidly to become a significant academic institution in the Norwegian higher education landscape.

The UiS has a very strong cooperation network with public and private partners in regional innovation activities and through interaction with society as a whole. The mission of the UiS is to challenge the well-known and explore the unknown through innovation and entrepreneurship in education, and by collaborating with regional stakeholders and international partners. Our study programmes give students unique opportunities for learning through problem-based work, international exchanges and interaction with alumni and the world of work.

In joining the ECIU University alliance, the UiS is offered a unique chance to strengthen its societal mission to provide modern, state-of-the-art teaching and learning opportunities to all learners. As a research-intensive institution, the UiS works hard to connect students, researchers and industry and societal partners in the knowledge triangle, and the need to collaborate closely with equal partners on European level is crucial to developing the quality and relevance of our education and research. Being part of the ECIU University, will create a better understanding of the relation to the society, addressing the UN sustainable development goals and national priorities. UiS also expects to enhance the level of internationalization through increased student and staff mobility of all formats and for all learners, and through creating a truly international learning, teaching and training environment.

Strategy 2030 for the University of Stavanger stresses that we will be an open and innovative university that demonstrates a high quality of education, research, and artistic development work. Our common direction will be guided by the responsibility for sustainable transition. Energy, health, and welfare and learning for life constitute our areas of priority.

Our core values will govern our interaction with students, staff and society. They will help us steer towards the achievement of our vision and our objectives as a university. The University of Stavanger is:

- *Independent.* Students and staff will continuously interact with society and be a driving force behind the independent, critical quest for new knowledge. As an institution built on democratic and humanistic values, we uphold academic freedom and independent research, and promote ideals such as freedom of expression, integrity and equality. Through critical reflection and clear communication, staff and students will put important issues on the agenda and actively participate in the academic and social debate.
- *Involving*. We value transparency and will involve students and people of the region in the academic community. We share our knowledge and expertise. Involving means our decisions rest on a wider knowledge base. Respect for each other's differences and backgrounds creates an environment that fosters social and academic participation. Universal design will be a priority in our studies and our physical and digital learning environment. Diversity is valued as a resource in our learning environment.
- *Creative*. We will push forward the boundaries of knowledge and skills. Creativity and innovative activity will define our scientific, artistic and administrative activities. We will promote the application of new knowledge and encourage wise decisions in the community and workplace. We will promote quality of life, good living conditions and sustainable development. Our courses of study will be formative journeys that develop the individual's ability to think critically and make reflective life choices.

Tampere University (TAU)

On 1st of January 2019, the University of Tampere and Tampere University of Technology merged to establish the new foundation-based Tampere University (TAU). Furthermore, the Tampere university community is made up of the research-intensive Tampere University and development-focused Tampere University of Applied Sciences. Together we are building a new model for higher education and research in Finland. The universities form a community of 30,000 students. We are committed to openness, sharing of ideas, sustainable development, fairness, and equality. Tampere University innovates and actively co-creates with its students and stakeholders the offered education for students and lifelong learners. We have made it our mission to address the greatest challenges facing our society and to create new opportunities.

The guiding principles of our university community are:

- Multidisciplinary learning and lifelong partnerships
- Combining world-class research and innovation activities
- Unique expertise in developing applications that benefit industry, business, and the public sector

- We are committed to offering our students flexible and individual degree paths that enable them to make effective academic progress. Our students are active and goal-oriented and pursue studies in an environment that is conducive to learning. We are an inspirational university community for future game-changers
- We will offer our partners high-quality research and the best possible professional development solutions.

We engage with society at regional, national, and global levels through seamless cooperation, both internally and with our external partners. Every discipline and field of education within our active university community can recognisably contribute to the sustainable development of society. The members of our higher education community and its networks are committed to implementing a culture of cooperation. Our areas of focus are technology, health and society, and the strength of the Tampere higher education community lies in the amalgamation of these areas. The leadership expertise related to these areas and the structure and interactive nature of our university community promote excellence in teaching, research, and development. The higher education community relies on its areas of focus, in particular, to meet these challenges and create new opportunities. We also boldly allocate resources to new activities, as the proposed European University alliance, that have the potential to develop into internationally renowned and attractive areas of focus in terms of research, teaching, and practical application. The three shared goals of our activities. The goals are based on our tasks, which are teaching and research, plus the impact created by the two.

I. Promoting interdisciplinary education and life-long partnerships We provide our students with flexible and individual study paths that facilitate profound expertise, understanding and the ability to see the big picture in a multifaceted way. We support the successful careers of our students and their membership of the University community after graduation, for example, through alumni activities, partnership models, mentoring and further study. Our community educates students who will solve wicked problems, change the world and become reliable knowledge professionals and experts in the future. By emphasising research-based best practices, we integrate research into education and lifelong learning in both academic and applied fields.

II. Linking pioneering research and innovation We use novel operating models to create scientific and societal value throughout the process of knowledge creation, from independent, multidisciplinary basic research to innovations and practical development. Close and well-organised interaction with stakeholders and multidisciplinary research and development platforms and programmes that combine different disciplines enable the blending of high level scientific and applied research and its integration into practical applications at different levels. We have developed project-based programs that integrate interdisciplinary teams of researchers and students in solving wicked societal problems based on guidelines of the UN's SDGs and industry-led corporate research to practice project programs.

III. Generating unique expertise in industrial and public-sector implementation Active and well-organised interaction with our partners as well as our own research, innovation and development activities generate unique application skills, which can be shared with the business community, the public sector, non-governmental organisations and the sharing economy. The openness of our teaching, science and knowledge enables an application that is more efficient, and it makes us an international trailblazer. In particular, our applied sciences education and degrees play a key role in generating

applicable skills. Our university community ensures seamless connections between research, academic education, and professional training.

Proposal for implementation

The intention is to prototype and test the concept of shared roads to valorisation with the four members of Innovation Hub North, and later offer the concept to the other enable common valorisation paths will require to:

- Set up dedicated contact points at each member in the hub. The people working at these points need to have resources (time) allocated for this. This is probably more straightforward for the commercial than for the non-commercial parts.
- Establish a process to evaluate and select project candidates for valorisation through cooperation between the members of the hubs.
- Develop standard contracts for cooperation, both commercial and non-commercial, need to be established.
- Pilot and evaluate the scheme for Transnational Innovation Vouchers (TIV).
- Establish a communication plan. Communicate the aim and function of the Innovation Hub to all ECIU member universities and LPAs
- To identify a sufficient quantity of project candidates, most likely by proactive work. To establish routines for regular meetings to coordinate the work with our pipeline. This should also involve interaction with the TTOs.
- Establish synergies with European Institute of Innovation & Technology (EIT) through the HEI Initiative project BOOGIE-U (https://www.eit-hei.eu/assets/pdf/fact-sheets/EIT-Project-Fact-Sheet-BOOGIE-U.pdf). The objective is to open the fairly strict boundaries between member and non-members in the EIT Knowledge and Innovation Communities (KIC). There is a specific work package which aims at expanding the concept of innovation Hubs.

ECIU Innovation Hub Mid – a common connection point for third parties

As society is confronted by the ever-pressing need to innovate quickly and effectively, particularly in the face of global challenges, companies are seeking to harness university research and the associated entrepreneurial environment by working with them as partners or as direct commissioners of projects. This is often referred to as the paradigm of open innovation[6]. An essential skill for innovating is the ability to aggregate knowledge from many sources and build trusting relationships. This has led to the adoption of co-creation schemes. Co-creation competitions, for example, are regarded as a particularly effective way to develop breakthrough or disruptive innovation.[7] The challenge in implementing such an approach is, firstly, to find the optimum constellation of expertise and secondly, to have some form of contractual arrangement with the coalition so that delivery of results within a specified timeframe can be assured. Many companies have a strategy of working with a limited number

[6] Open Innovation: The New Imperative for Creating and Profiting from Technology, Henry Chesbrough 2003

[7] See for example the 'iknow-who' method by Sigvald Harrysson https://iknow-who.com/method/

of universities – strategic partners - in order to simplify and reduce the transaction costs that are otherwise incurred with multiple contracts. However, in general it is true to say many companies find working with academics frustrating because of different priorities and timeframes, and vice versa

For other external bodies such as regional authorities, there are clear benefits in being able to link through university connections to other regions to share insights on responding to common challenges. National governments set policy, but it is at the regional level that implementation takes place, especially when it comes to UN SGD11.

Therefore, the rationale for addressing the Innovation Hub as an entry point for external stakeholders as proposed in this concept note can be summarised:

- It can strengthen the relationship between ECIU members in their innovation support activities
- It can provide a means for an individual ECIU member and its constituents to provide a broader pool of competence when needed to address a third party challenge.
- It can provide industry with a gateway to work with a network of universities more efficiently than through individual approaches
- It can provide regional and public interest organisations with an opportunity to profit from expertise and experience in other regions
- It can address societal challenges on a collective basis, sharing resources and expertise.

International multi-partner collaborations are invariably complex. The co-alignment of interests requires skillful negotiation and management when being set up and for maintaining a productive collaboration. Nevertheless, as the European Framework programme has shown, a common set of procedures and model contracts that are familiar to all parties – 'the framework' – can make it possible for complex trans-national multi-disciplinary coalitions that work to address a challenge to set up in a relatively agile manner. The rapid response coalitions set up under Horizon 2020 to address need for a response to case of Ebola 2014-15 and COVID-19 in 2020 are a manifestation of this.

The destination

The Innovation Hub defined in this context is conceived as an entry point to the ECIU University that facilitates contact for many different interested parties trying to reach it from the outside in. The Innovation Hub provides the means through, for example, a call for expression of interest to pull together a constellation of researchers, start-ups and if relevant, societal actors to address the challenge on a co-creation basis. It addresses the arrangements needed to establish a common interface to the ECIU network as a whole for a particular challenge or need posed either by an external entity, or another ECIU member university seeking to enlarge its capacity to meet a need.

The Hub provides

<u>Connection</u>

- An entry point to the ECIU network for the purpose of placing an enquiry across the network for expertise or the formation of co-creation teams.
- A named Network Contact Point who is connected to Local Contact Points in each ECIU

Matchmaking

- Matchmaking of external enquirer to researchers and university innovation eco-systems
- Formation of multi-disciplinary – intra-university teams

Simplified arrangements

- Standardised arrangements for the principles for intra-university and trans-organisational working across ECIU.

Access to interlinked TTO services and funding advice

- Expertise on (European) funding opportunities
- Expertise IP arrangements
- Access to the TTO network partners of each ECIU member

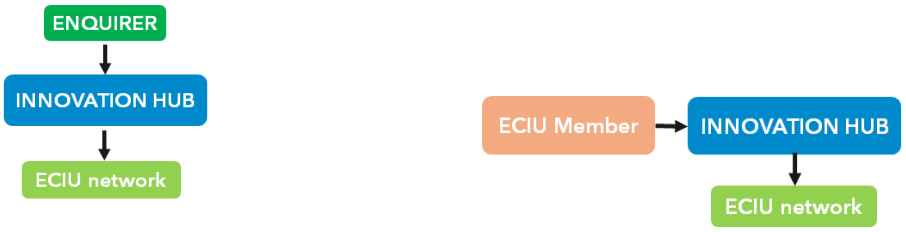


Figure 1: *ECIU-U Innovation Hub provides a simplified interface to the whole ECIU network: on left as an external entity; on the right as an enquiry be another ECIU member*

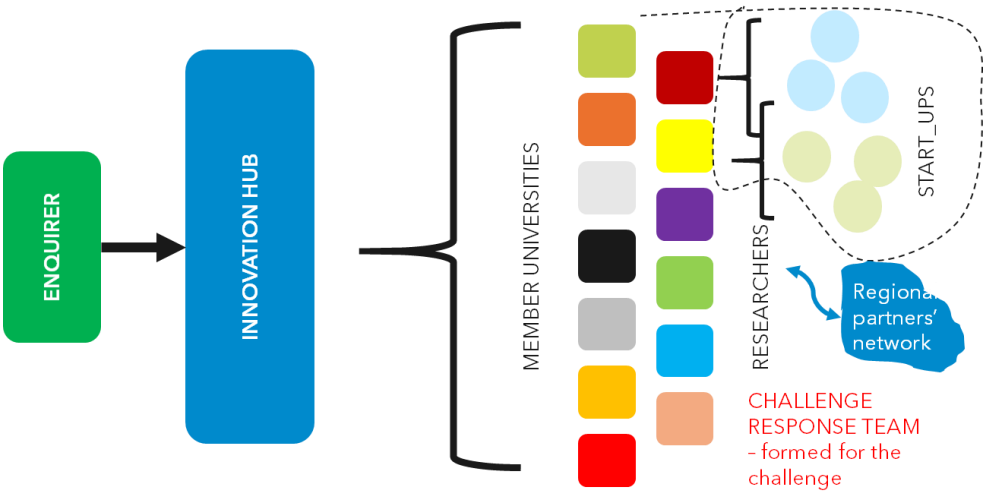


Figure 2: *Innovation Hub provides the mechanism for pulling together a trans-university cooperation*

Challenges for implementation

Universities present a notoriously complex interface to outsiders regarding their modus operandi, organisational structure and persons to contact for cross-cutting issues: they operate

as independent public bodies with constraints on what they can provide as exclusive or privileged access to services: they are designed to expand and transfer academic knowledge combined with the enshrined academic freedom which limits the powers of the central governance. Each has its own profile and image of itself and sometimes fiercely protected individual identity and culture.

ECIU has been remarkably successful in developing a spirit of trust and sharing within the network that has led to the ECIU-University bid. Nevertheless, each university is under pressure to draw on more external sources of funding, particularly from industry and society. Universities compete with one another for attention and research contracts. Competition isn't only between universities, but also within universities, between departments and individual academics who are often, understandably, protective of their contacts on whom they can draw for funds.

Competition for funding has led to the increasing professionalisation of grant and funding acquisition, with most universities now offering support officers for this purpose. These people are operational and focused on this task (they may even operate to specific targets) and do not have patience for visions not rooted in operational reality. Many academics struggle with the rigid restrictions and long-term deliverables defined in the funded projects and seek a more agile way of working with co-creation partners.

The establishment of an Innovation Hub according to the description above, means winning the trust of many people in each university who are needed to make it a success, but must first be convinced of the direct benefit to their domain of work.

Another challenge is that each university has made its own journey with regard to third mission services and has its own organisation to support funding acquisition, exploitation of research, support for entrepreneurs, patenting and licensing, strategic partnerships, regional engagement etc. Some, like Hamburg University of Technology, have established a separate legal entity to provide such services, in others is remains an in-house function. (See descriptions provided).

Therefore, to be successful in moving forward to establish a European university approach to challenge-based innovation, a pragmatic approach is needed which provides a pathway to the destination without the necessity in the first instance to change current structures within each university, but with a view to exploring new forms of collaboration between the ECIU members.

One form of an Innovation Hub is therefore to look at what needs to be implemented across ECIU to facilitate more effective support for challenge-based (co-created) innovation by facilitating cross-university collaboration that makes full use of ECIU member regional innovation eco-systems

Comparing and contrasting current structures

By way of illustration of this above point, in this section we present the current set at the four ECIU members grouped together for Innovation-Hub Mid.

Aalborg University

AAU Innovation is the central unit for utilization and commercialization of research and knowledge at Aalborg University. Moreover, AAU Innovation includes the grants, and contracts office, fundraising and research support, and the support of innovation activities in general in and around Aalborg University. AAU Innovation as based in the campus incubator in close

connection to investors and private R&D companies. Besides utilization of knowledge, a key focus in AAU Innovation is supporting startups and in general encouraging entrepreneurship.

AAU Innovation handles all aspects of IPR and contractual negotiations with industry and has for the last many years been the leading Danish university when it comes to the commercialization of IP and has been rated by the confederation of Danish industry as the most professional contracts office in Denmark. Based on a solid experience of working with traditional TTO-activities, the notion of commercializing knowledge and IPR has extended into working with the utilization of SSH research, becoming an ESA Business Incubation Center hub and systematically working with cluster organizations in developing innovation projects.

At Aalborg University we have a strong focus on using our global outreach to create regional impact. The university is based in a region with a low intensity of R&D focused companies, and many R&D focused companies are either spin-outs of the university, or daughter companies of international companies. AAU Innovation play a key role in collaborating with the innovation ecosystem on attracting foreign investments and companies to the high quality of research and the best engineering education in Europe.

AAU Innovation is a central entry point for collaboration with Aalborg University on research and innovation, and AAU Innovation play a central role in handling external contacts and partnerships. With a strong network of dedicated academics in every department, there is a strong organization to support collaboration between Aalborg University and our surroundings.

Dublin City University

INVENT is DCU's technology transfer and commercialisation unit. Located on campus it provides a range of services to DCU academics, existing businesses, and start-up operations. Advice, support, and expertise include funding and grant acquisition, IP, patent and licensing, appropriate research/industry partnership and provision of facilities. In cooperation with DCU's HR department Invent also offers continuous professional development for DCU research staff.

While there is a regional focus in Ireland, as a small country the regions are not well defined. Most universities will liaise with industry partners who are in relatively close proximity, there is no legislative or funding imperative for this and alliances are also formed based on research/industry alignment which is not always based on geographic location. In addition, while outside of Dublin universities are more regionally located, in Dublin itself the four largest universities in the country are located within about a 20km radius, with a fifth just over the county boundary.

While INVENT is the primary mechanism for commercialisation and technology transfer, all such activity is not managed exclusively through INVENT and there are still activities which are effected at the School, Faculty or research centre level or even between individual academics and industry partners. INVENT does not manage any undergraduate student activity.

Hamburg University of Technology – Tutech Innovation

TUHH was founded in 1978 with inter-disciplinary industrially orientated research and technology transfer in its DNA. Tutech was established in 1992 as a limited company owned by TUHH for the purpose of managing industrial research contracts and exploitation of research results. TUHH was the first public university to establish a private company for this purpose. In 2004, following changes in legislation regarding professorial privileges regarding rights to

intellectual property, Tutech became host to the Patent Exploitation Agency for Hamburg's public universities. Also in 2004, a sister company to Tutech, Hamburg Innovation was founded, providing an organisation to support all public universities in acquiring external funding as well as promoting common interests. Tutech works together with Hamburg Innovation (staff perform dual roles) to actively acquire research funding contracts, as well as to initiate, manage, and participate in public funded initiatives involving public, economic and academic interests. Tutech provides funding advice for SMEs, is a partner in the European Enterprise Network, and is the EU Office of TUHH providing support for European funded projects.

This means that TUHH already has a centralised entity for handling external contracts, particularly from industry. Tutech provides the contractual services for these (the contracts are made with Tutech) to include handle IP, payments, liability etc. Tutech also supports start-ups and works closely with the TUHH and the stakeholders of Hamburg Innovation to encourage entrepreneurship.

Hamburg is a city state of 1.7 million. In line with the federal principle of government in Germany, the City of Hamburg directs its own policies and funds the universities. Therefore, there is very close communication between the universities and regional policy makers.

Future development of the service provision is focused on developing closer ties between Hamburg's universities.

University of Twente – Novel-T

Acknowledging the importance of cooperation of regional stakeholders in the pursuit of regional economic and societal growth, the five regional founding fathers (the University of Twente, Saxion university of Applied Science, City of Enschede, Region of Twente and Province of Overijssel) joint forces in the Novel-T Foundation.

Novel-T:

- Supports the entrepreneurial attitude of learners and staff of the University of Twente and Saxion by offering dedicated workshops and coaching on starting up your own company
- Houses the knowledge transfer office of the University of Twente and Saxion and offers technology transfer support to researchers by creating an entrepreneurial mindset and hands-on business development support to transfer technology to industry or create new spin-offs
- Offers legal support to the university in case of external cooperation
- Offers an entry point for student-involved cooperation (challenge-based education, thesis, internships, etc) for both the University of Twente and Saxion
- Offers innovation support, including university cooperation opportunities, to local SME's
- Develops regional clusters based on strengths and needs

Thus, Novel-T is the main platform for regional, multiplayer innovation.

The support of long term, (inter)national cooperation and funding acquisition for the University of Twente is internally based at the Strategic Business Development department of the UT.

ECIU Innovation Hub South – linking to challenge-based approaches

Universities play a key role to solve the great social challenges which Europe is facing in this post pandemic era. Universities are providers of knowledge, skills and capacities that are needed to connect, from a multidisciplinary perspective, the interests of different institutions and knowledge-intensive sectors.

An innovative university also acts as an engine of its innovation ecosystem where it is located. This concept refers both to the set of organizations that contributes to the creation, dissemination, absorption and application of economically relevant knowledge and the physical space where these interrelationships occur (region or territory).

In this context, universities lead territorial open innovation networks, environments of mutual trust and common interests, which represent new forms of connectivity that enhance regional proximity. These networks make it possible for organizations to share values, objectives and narratives, maintaining a common belief in the possibility of progress in the territory by establishing forms of collaborative processes (co-creation).

From this leadership position, universities have to promote proactively a broader vision of innovation, integrating technological, economic and social development into education and research.

Challenge-based learning

Universities respond to the increasing number of local and global complex challenges redefining their own research priorities and teaching approaches.

To do that, the ECIU University approach is based on the challenge-based learning (CBL). A learning and training process based on real-life situations makes a difference and proposes a profound, attractive, meaningful and purposeful way to acquire and develop the knowledge and skills needed for the future, closely related to research and innovation.

In this new vision, the third mission of ECIU university is strategically related to projects, both research and education, as part of a deeper strategy of creating entrepreneurial awareness, collaborative openness, challenge-based research and innovation and multi-stakeholder networks, in a dynamic and sustainable innovative environment that needs both short-term solution-oriented research and incremental, long-term, high-risk open research. In this environment, universities (researchers and learners), administrations, citizens and companies recognize and participate in an iterative process of innovation in which teaching, basic research, applied research and prototype development stimulate and improve each other multiple times in a cooperative process.

Innovation of Education Labs and Local Partnership Arenas

ECIU University is the first European university where students and researchers cooperate with cities and companies to create innovative, relevant and sustainable systemic solutions to real life challenges with real social impact, preparing students to face disruptive social, technological and economic challenges in the future.

These solutions will require fundamental changes in lifestyles and patterns of consumption and production in order to be transformative. Transformations require new visions and, very often, these new visions emerge from the bottom up, from people and communities who are familiar with and face problems that affect them. These new visions have to represent a transition from present systems towards sustainability, generating new opportunities as regards the creation

of jobs, the emergence of new business models and improving quality of life but, at the same time, also cause disruptions in established investments, behaviours, knowledge and prevailing values in society. They also generate impacts that focus on certain sectors and territories, which often cause multiple resistances to change.

The territory is key in these transitions, since this is where new responses to major societal challenges are tested. Therefore, it is a key role for universities to provide interaction with external stakeholders in order to implement this new strategy. It is essential to generate meeting spaces (local spheres) where actors in the territory can work together to co-design possible solutions, implement them, learn from them and generate collective knowledge.

Local Partnership Arenas (LPAs) are these local spheres where the actors know each other, have the same problems and can share visions and solutions to generate new models of production and distribution, new business models or new forms of consumption. LPAs delimit the territory and establish networks for the development of new collaborative approaches and solutions.

LPAs are the playgrounds for solving multi-disciplinary challenges in entrepreneurial, innovative ways and provide personalised learning and career opportunities for life at the European level. They provide their societal stakeholders, learners and research entrepreneurs with a gateway addressing societal impact on a collective basis, sharing resources, networks, and expertise for the support of successful implementation of innovation

So, LPAs have the main objective of identify and supply challenges for the wp2 (CBR) and wp3 activities (CBL). The Society Quest implies the identification of a significant challenge in the territory, linked to the SDG 11, and the initial study of the problems associated with the challenge and of the actors and factors most closely related to it.

ECIU Education Labs are physical and virtual spaces where teachers can innovate and deliver classes, meet peers and share best practices. Innovation in education is fostered in-creation with learners, industry and public organisations.

Innovation hubs

As described in the ECIU University Erasmus+ project, the **Innovation Hubs** will be used as **physical and virtual locations** combining open innovation methods and as coordinating environments designed to provide critical mass, facilities and best practices which could help to translate **solutions** in economic and social value (valorisation).

Innovation hubs open-up possibility for third parties to collaborate with a network of universities in a form that simplifies the contractual relationship, strength ECIU cooperation, enhance the role of universities in supporting innovation and facilitate inter-regional collaboration. The necessary impact is generated by organising people from different disciplines and professions, with different knowledge, skills and experience. This will also foster global interaction among scientists, regional and international stakeholders.

Transitions and experiments begin in spaces at the local level: the actors at this level know each other and share problems, so it is easy for them also to share visions (challenges) and propose solutions. However, for these experiments to be truly transformative, they need to be multi-scalar with a collaborative approaches and solutions that may be relevant for many other territories. Because transformative changes often require new regulatory and institutional frameworks, as well as coordination and coherence between policies and fields of knowledge,

experiments need to connect with other local, regional, state and European initiatives and strategies.

In this context, South Innovation Hub could serve as a cluster for a particular region and become the instrument for managing activities and knowledge flow from local (cities) to regional level (South Europe), facilitating interaction among members of the four LPAs **(Aveiro,** Barcelona, Trento and Toulouse) and linking all them with the other two regional ECIU Innovation hubs (Mid and North IH). As Innovation Hubs can build on the existing capacities at the Local Partnerships Arenas, their labs, offices campuses and local environments of the ECIU South partners, they could allow students and researchers to test solutions raised from the CBL activities in new environments, exchange experiences, to have access to specific prototyping facilities, expert, stakeholders or markets.

It necessary means to identify all existing capacities, resources, know-how and scientific domains of expertise under the SDG11 in each institution and to stablish mechanism for coordination at SIH level. In this sense, it should be into account that in some instituitions theses capacities and expertises are distributed in different campuses. So, the SIH have to consider how deal with this local dispersion in order to facilitate the easy access (one-stop-shop) to all these resources.

There, IH can share challenges which could have impact in more than one LPA, bringing together people (students, researchers, stakeholders, companies…) and teams from across the ECIU universities to come up with ideas, projects and solutions.

Facing SDG11 challenges requires a truly interdisciplinary approach, from a broad range of scientific disciplines (social, natural, and engineering science ...) Its necessary to provide the students with the necessary knowledge, skills, and competences to tackle urban challenges through collaborative, interdisciplinary research and project work.

SIH can also provide support to those CBL or CBR solvers who have the initiative of translating their solutions to the society. It means to meet, as a network, those needs that couldn't be meet at local level. It could be done giving them IPR advisement, scalability capacities, entrepreneurial training and skills, business analysis, funding access, stakeholders network….

How should South IH operate?

If we assume that South IH could provide support to those CBL or CBR solvers who have the initiative of translating and scale-up their solutions to the society, the implementation of these initiatives could be defined in three different steps:

Steps 1 and 2 are clearly related with the Local Partnership Arenas: to create a collective mindset (positive, creative, communicative, motivated and resilient community) and to support this community in their ideation and prototyping activities during the CBL processes. The ideation process also include all tasks related to the society quest

South IH could focus its activities on the last step, supporting our communities in translating solutions to the society, scaling them up and, if necessary, supporting LPAs in their processes.

As we can see, nothing of that is new for us. These three steps are fully shared with a classical university entrepreneurial pathway:

So, we could start the South IH set up describing which capacities and structures already exist in our universities:

1. **Local Partnership Arena Description**

Territory, municipalities, main figures, industry….

2. **Capacities for building a collective/entrepreneur mindset (minors, masters, courses,** MOOC:s, videos, workshops, specific programs for developing skills and behaviors…..)

3. **Capacities for ideation, prototyping and launch project/start-ups** (scienceshops, living labs, idealabs, ideation programs, design labs, design thinking materials, fablabs, entrepreneur launchpads, incubators, mentoring programs, seed project/start -up funds….).
4. **Capacities for scaling-up or accelerating projects/businesses** (startup accelerator program, coworking facilities, venture capital funds, investors network…

Once done, as a hub we could design some coordinated activities, for instance:

- **Mapping** (see example next page) of existing capacities, resources, know-how and scientific domains of expertise.
- **Creating a virtual (digital) SIH platform** to share resources, practices, evens, programs…
- **Designing a six month solution accelerator program**, selecting some projects from our 4 entities (total 10 per year) in order to provide solvers with some funds (Innovation vouchers), mentoring, rapid prototyping if need, access to networks, investors …'
- **Identifying a physical location in each university** which could be allocated the local representative of the SIH in the LPAs.
- **Exploiting our network:** All three innovation hubs consider to **participate** in the next ***HORIZON-EIE-2022-CONNECT-01*** call (deadline April, 2022) in order to increase inclusiveness by enlarging the participation of more diverse innovation actors and broaden the participation among EU and Associated Countries territories, in the ECIU local partnership arena network that **interconnect European innovation ecosystems and promote the deployment and scale-up of innovative solutions**

Comparing and contrasting current structures

UNIVERSITAT AUTÒNOMA DE BARCELONA

Local Partnership Arena Description

The B-30 Territory is one of the key industrial hubs for innovation, research and entrepreneurship in Southern Europe. The name of B-30 comes from B30 highway, which is one of the most important traffic hubs in all of Catalonia. It has a population of 1 million inhabitants, distributed in 23 municipalities. There are around 1,300 industrial sector companies that have a medium-high/high level of technology and place a clear emphasis on exportation.

It is therefore an area of great economic vitality and offers a wide range of opportunities to companies and economic actors.

Some figures

- 23 municipalities

- an area of 485 km2 + 6.579 ha. of industrial land
- 1.018.166 inhabitants
- 30.173 companies
- 387.478 employees
- 195 economic activity areas
- 24 business centers and areas of economic activity
- 10 university centers

UAB: Capacities for building a collective/entrepreneur mindset

- Minor in Entrepreneurship and Social Innovation
- Master's degree in Entrepreneurship and Social Innovation (mEINS)
- Graduate Diploma in Social Economy: Local Development, Cooperatives and Social Transformationdoctorats (MAREB i iDEM)
- EINES awards
- CIEU awards
- Biznellis
- Specific workshops
- UAB Empren
- Pills: Business models / Design thinking/…
- Guides

UAB: Capacities for ideation, prototyping and launch project/start-ups

Ideation

- UAB Design thinking toolbook
- Ucitylab leaerning platform
- Covadonga Urban Lab
- Metropolitan Laboratory for Ecology and Territory of Barcelona (LET)
- Collaborative workspaces
- Ideation programs
- Community

Development

- Design-FabLab, Digital Lab
- Proof-of-concept funds

Launch

- Centre d'Iniciatives Emprenedores Universitàries (CIEU)
- Centre for Entrepreneurship and Social iInnovation Research (CREis)

- Legal and business advisors (TTO)
- Incubator
- Smart money funds
- The Collider oncampus
- Seed deep tech Barcelona

Capacities for scaling-up or accelerating projects/businesses

- HUBB30
- Competitive Intelligence Tools
- Looking for experts: UAB Research Portal

PROPOSALS FOR IMPLEMENTATION

1. Establishing shared routes for valorisation
2. Proposal for implementation
3. The intention is to prototype and test the concept of shared roads to valorisation with the four members of Innovation Hub North, and later offer the concept to the other innovation hubs as well.
4. Dedicated contact points need to be appointed. The people at working at these points need to have resources (time) allocated for this. This is probably more straightforward for the commercial than for the non-commercial parts
5. Standard contracts for cooperation, both commercial and non-commercial, need to be established
6. We need to understand if synergies with European Institute of Innovation & Technology (EIT) can be obtained. There is an open call such work, the HEI Initiative for Innovation Capacity Building for Higher Education (https://www.eit-hei.eu)

Establishing a common connection point for third parties

Handling external enquiries

External enquiries for support may come from direct personal contacts to individual academics or through the corporate interfaces such as the TTO office, through educational programmes or through the activities of the university leadership. The Innovation Hub is not intended to replace existing channels, but rather to make possible connection to complementary sources of expertise within the ECIU network beyond individual members

The following pathways could be considered:

Initial contact made	Options for initial handling involving ECIU-U
- to individual academic or Head of Research Group	1. Deals with it him-herself 2. Connect to others in university 3. Informs ECIU-U 4. Seeks support from ECIU network
- to TTO office or equivalent handling external enquiries or central functions of the university.	1. TTO officer contacts potential academics 2. Forms response 3. Informs ECIU-U 4. Decides to seek support from ECIU network
- to ECIU Secretariat	Passes the enquiry to ECIU Members and coordinates response

In all cases, the access to the ECIU network or receipt and forwarding of enquiry from ECIU Secretariat presupposes existence of named contact persons to act as the communication node which necessitates then that there is a contact point in each ECIU Member.

ACTION 1 Step up contact network.

Process management requirement: For the case of the enquiry coming to ECIU centrally a process to forward and track action and response needs to be in place.

I. Each ECIU member shall appoint a person to act as coordinator for the innovation hub enquiries

II. These persons should be able to engage with all relevant persons and functions of their university in a fair and unbiased manner and balance the stakes of the external party and the university.

III. They should feel responsible, feel motivated and have time to ensure prompt attention can be given to enquiries and that follow-up is assured.

This becomes part of the Governance and handling procedure described below.

Governance and handling procedure

The underlying principle of what is being addressed in this document is essentially a Governance Framework so that enquiries from third parties – challenges – can be addressed to ECIU-U members. The aim is to have a Framework agreement in place covering the matters that follow to provide consistent and streamlined handling

- **Resourcing at the Interface Points**

  Providing a resource(s) at each university who can triage an enquiry and advise the enquirer and/or the potential recipient of the enquiry.

  It follows from the above that there is a need for interface point within the ECIU Secretariat and within each Member university who can channel enquiries and ensure follow-up.

  A Database of scenarios (Decision Support System) might be considered.

- **Characterisation of the form of the collaboration / services sought**

  There will be a need to consider the form of assignment sought: student projects, research and technology transfer/commercialisation. In the case of challenges that align with the ECIU-challenge approach this process will perhaps be processed separately.

- **Handling intellectual property (IP)**

  Agreements on student, researcher and company IP ownership need to be put in place, taking into account existing custom and practice, legal and regulatory frameworks. For ECIU to act as a corporate body there needs to be some consistency of practice to avoid different conditions being applied depending which university is originally approach or who takes the lead.

- **Handling potential conflicts of interest**

  Consideration w.r.t forming agreements with industry partners who are competitors of other existing partners need to be addressed and how NDAs may be applied.

- **Risk and Reward**

  Where a collaboration is cross-institutional, inter-country and involving multiple parties (students, academics, industry partners etc.) considerations of insurance, indemnity,

legal liability as well as rewards which might ensue from the collaboration need to be considered.

- **Payments**

  Procedures for payment are needed. Who is the contracting partner? How to tackled different rates, taxes, sub-contracts

- **Governance**

  The Innovation Hub will need a Management Board

- **Enhancing regional impact**

  Tackling the specific case on inter-regional projects, provide scalability and trans-regional cooperation

Conclusion and proposal for next steps

Strengthening the challenge-based research and innovation (R&I) agenda of HEI based on civic engagement, accelerated R&I capacities, incentives structures, and investments strategies will ultimately lead to a long-term structural institutional transformation. A transformation with positive impact in the way research is organised and facilitated towards co-creating solutions to societal challenges and transforming the outputs and outcomes into values for societal impact and development.

An impact-driven R&I model furthermore improves staff skills, including entrepreneurial, transversal, intercultural, digital, and green skills, and fuels innovation through a flow of creative ideas to support the establishment and scaling up of start-ups and SMEs regionally as well as in Europe. This occurs notably by setting up an impact management process (below), reinforcing knowledge transfer, and thus potentially supporting the development of emerging novel concepts likely to lead to breakthroughs, market creative innovations, and societal impact.

Project's pathways towards impact

As the project is aimed to accelerate the impact agenda of challenge-based research the stakeholder group model of ECIU University is the starting point of the journey. The ECIU University ecosystem is based upon open and inclusive collaboration connecting societal stakeholders, academics, and learners to provide European answers to future societal challenges, illustrated in figure 3 below.

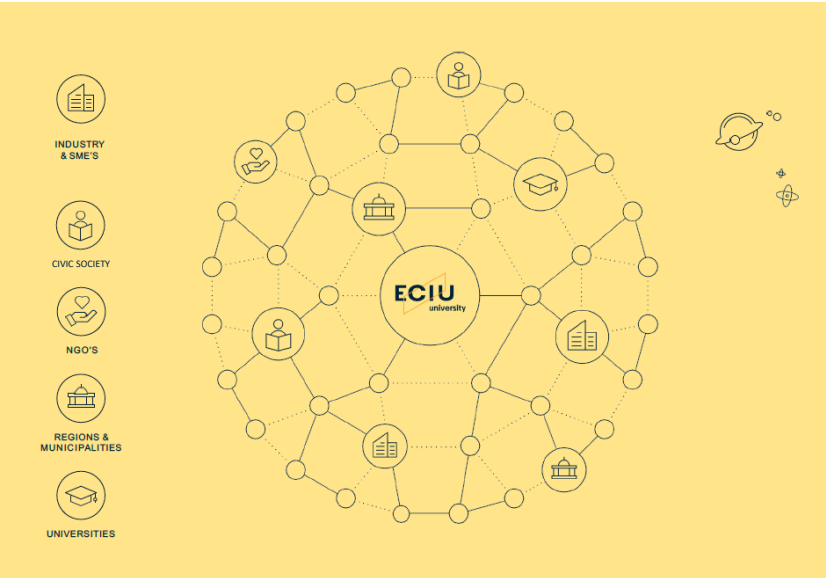


Figure 3: *The ecosystem of ECIU University*

Through Local Partnership Arenas (LPAs), set up by ECIU University at each member university, contemporary challenges for the advancement of a future viable society are sourced, discussed, refined, and eventually defined into challenge-based learning, research, and innovation opportunities for ECIU University learners and academic staff. The LPAs are built on quadruple-helix settings, involving private, public, as well as NGOs, and academia connected by ECIU University to a European wide ecosystem. For private (industry & business) and public organisations, the ECIU University membership means continuous access and participation in shaping knowledge and talent, as well as open, creative collaboration.

Cities, regions, and communities are interconnected to maximise benefits of the ecosystem, and enterprises find benefits in like-minded stakeholders, researchers, and citizens. An ECIU University Challenge Partner is not only the supplier of the challenge but is also actively involved in the progress of the work. Sometimes participating in (part of) the project challenge-solving process as an external specialist, or perhaps as the most preferred adopter of results or even as a co-learning member of the development team. In the proposed project these structures is going to be further accelerated.

ECIU's approach to planning, monitoring, and evaluating impact is built on the concept that, in order to assess the value of educational, research and innovation activities, it must be possible to track the process from inputs to impacts. The ECIU Impact Framework shown in Figure 4, is used to articulate 'pathways to impact'. It identifies the inputs and activities required to deliver outputs, and the uptake and adoption outcomes which will need to occur to eventually lead to the desired impacts.

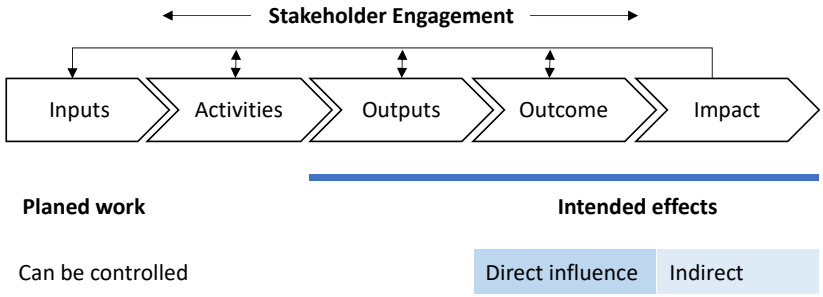


Figure 4: *ECIU University's Impact Framework*

Each of these components may be understood as follows:

Inputs: Resources applied to deliver activities, such as people, equipment, funding, etc.

Activities: Actions taken, or work performed through which inputs, technical assistance and other types of resources are mobilized with the intention of achieving specific outputs (e.g. challenge-based education, research, and innovation, societal engagement).

Outputs: The intended or desired **short-term effects/results**. The solutions, services, and/or capacities that result from the completion of activities (e.g. publications, reports, prototypes, training packages, students/learners trained).

Outcomes: The intended or desired **medium-term effects**/change expected to be realized from the successful delivery of outputs and uptake by partners and people (e.g. capability, employment, new techniques, process and behavioral changes, adopted policies, new products, licenses/IP sold).

Impact: **Long-term effects,** system level changes that ECIU wants to promote**.** An effect on, change or benefit to the economy, environment, or society beyond those contributions to academic knowledge, as for instance specified by the set of UN Sustainable Goals.

The core concept of ECIU University rests on enabling and facilitating a European challenge-based approach to education, research, and innovation. Where students and learners from different disciplines, cultures and countries cooperate together with researchers, companies, cities, regions, non-governmental organizations and local communities in finding creative and innovative solutions to global challenges.

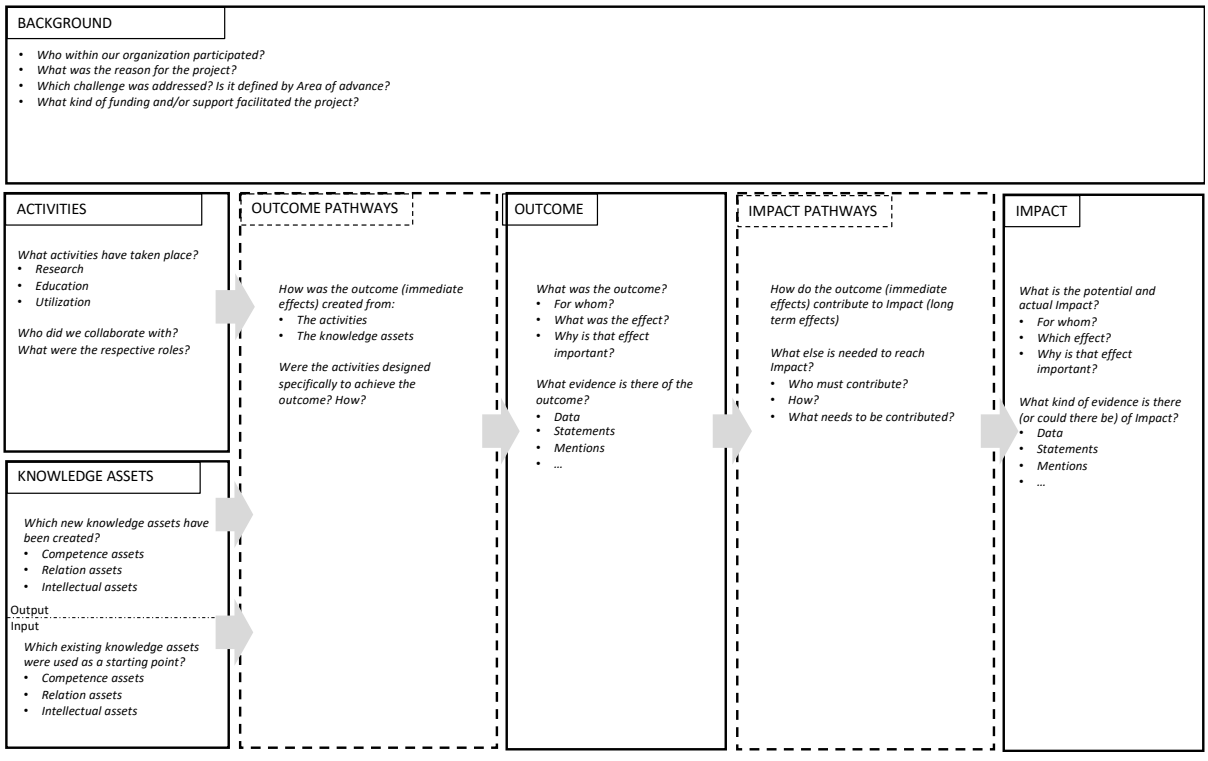
Using impact planning, as a management tool specified in WP5, the outputs, outcomes, and potential impacts of various activities can be elaborated and further specified for the various stakeholders, as disused below and summarized by the canvas.

For the purpose of impact assessment, we propose to use the format of impact cases studies as embraced by a growing number of academic institutions and evaluating national authorities. An impact case is a structured description of a chain of events that leads to impact, starting with challenge, problem or hypothesis, an education, research, or innovation activity describing its uptake and finishing with the actual impact that has been created - an objective description of what has happened in the different step during the time period covered by the impact case, with as much supporting evidence as possible, qualitative as well as quantitative. It will help us to:

- Consider impact from the very outset of our endeavors and plan for it
- Determine potential users and beneficiaries early, and continually review
- Develop mutually beneficial, long-term relationships with our stakeholders
- Plan tangible ways the output can be mobilized to action
- Track progress of implementation of our activities to evaluate impact
- Prioritize gathering and recording evidence of impact throughout the project
- Provide information about the reach and significance of the impact
- Serve as a base for external communication and evaluations as well as internal communication, development, learning, and improvement

Impact Canvas

Impact canvas: Title, Innovation Hub, Area of Advance



Phase II: ECIUn+, 2023-2026

ECIU University strives for real social impact. ECIU University is a European-wide ecosystem based upon open and inclusive collaboration connecting societal stakeholders, researchers, and learners to provide European answers to future societal challenges. The 2030 Vision demonstrates a holistic view on how higher education, research, and innovation, together with the surroundings at both regional and the European level join their forces to create sustainable, societal impact in innovative ways. To achieve real impact, it is essential to measure achievements in the long-term and challenge, learn, and improve. Thus, a long-term impact framework is established, translated to the impact management process, piloted with actual impact measurements, and the efforts improved in real time. Working with the long-term impact framework is also essential to transfer from project-based thinking towards long-term impact creation as a European University.

In addition, sharing, connecting, and co-creating are the core principles leading all ECIU University activities. ECIU University disseminates and shares the essential results of ECIUn+ with all relevant stakeholders, ensuring that the results achieved are communicated and have impact on the EU society in large and serve the EU goals. The specific objectives for the future work are two-folded:

- Strive to maximise ECIU University social impact through setting up and operationalising a long-term ECIU University impact framework, piloting with actual impact measurements and improving the implementation in real time.
- Disseminate and share, ensuring that the results achieved are communicated and have impact on the EU society in large and serve the EU goals.

This will be achieved through consolidating a long-term impact planning and assessment framework that describes:

- The overall impact pathways achieving the ECIU University ambition in the long term.
- The qualitative and quantitative indicators linked to the relevant changes.
- The ways to measure the indicators and other information needs.
- The role and use of impact case studies and an impact toolkit for social innovations and entrepreneurship.
- How to work with the framework in the long term.

By implementing an impact assessment framework

- Implement improvements based on the analysis in real time.
- Run a hands-on impact support structure supporting (and ensuring) that challenges and learning create social impact together with TTO's (instruments developed in ECIUn) and the developed impact toolkits.

And creating and implementing a dissemination plan involving the following activities:

- Issue position and policy papers.
- Organise EU level events and representing ECIU University in the external events focused on HE policy makers.

- Share the results and outcomes of the ECIU University activities and its impact on EU society and serving the EU goals.
- Write press releases and interviews with experts with a focus on EU involvement to build a sustainable and inclusive society while innovating higher education.

Acknowledgements