University Industry Innovation Network

2022 UIIN Conference
13 - 15 June | Amsterdam, NL

GOOD PRACTICE SERIES 2022

Fostering university-industry engagement, entrepreneurial & innovative universities and collaborative innovation

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This study is an initiative of the University Industry Innovation Network (UIIN) and part of the UIIN Good Practice Series. The case studies are developed to support, develop and strengthen the interaction between Higher Education Institutions (HEIs) and business. The objective of the series is to highlight a wide variety of cases in different settings. As every environment is different (e.g. country, culture, stage of development, type of institution) UIIN collects good practices on various subjects and levels, including the organisational, departmental and project level. Presenting cases with diverse stages of development, types of interaction (e.g. collaboration in R&D, entrepreneurship), and types of activity (e.g. operational activities, structures and approaches) allows readers to get new impetus on how to foster university-industry interaction in their own organisation.

All case studies are presented in the same structure, starting with General Information, followed by the Background Information, Strategy and Activities Undertaken, Outcomes & Impact and Lessons Learned. We encourage you to critically review the cases, discuss them with your colleagues and further experts and get in contact with the respective authors in order to adapt the approaches to your own environments and exploit the full value of the presented cases. Through this publication UIIN strives to support and stimulate the development of university-industry interaction, entrepreneurial universities and collaborative innovation.

UIIN Good Practice Series 2022 – Fostering university-industry engagement, entrepreneurial & innovative universities and collaborative innovation

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GOOD PRACTICE CASE STUDIES: INITIATIVE

A transfer and innovation partnership in action - Nucleus Jena

This case delivers insights into the successful knowledge & technology transfer project Nucleus Jena.

Authors: Claudius Emanuel Seidel, Dr. Oliver Pänke, Thomas Wartner

Region: Europe

The role of the engaged university in entrepreneurial ecosystems

Background and Objectives

Nucleus Jena is a vivid, German state-funded transfer initiative by the partnering institutions Friedrich-Schiller University Jena (FSU) and Ernst-Abbe-Hochschule Jena (EAH) in the local ecosystem of East Thuringia/Germany. Both higher education institutions (HEIs) are committed to freedom of research and teaching and want to actively contribute to shaping the future by providing innovative solutions for society's grand challenges through science and education (cf. https://www.uni-jena.de/en/Leitbild and https://www.eah-jena.de/en/university/profil/mission-statement). Their combined engagement to improve the local innovation and knowledge transfer ecosystem led to the establishment of Nucleus Jena. This project's mission is to provide a one-stop-shop for regional innovation and knowledge transfer actors through e.g., supporting cross-sectional technology transfers and improve multidirectional exchanges, thereby representing a successful regional university-industry innovation network (UIIN). As such it aims to establish an (open) transfer culture within both institutions, be a key driver of innovation activities in the region and become a blueprint for the structured establishment thereof.

While the FSU has a strong commitment to and engagement in its "third mission", the EAH provides particular ecosystem value through its links to the local SME actors and its practically oriented researchers. Both institutions consider transfer as a strategic core activity and are aware of their role as an innovation enabler. One specific field of interest is the fostering of a positive innovation and transfer-supporting culture: since private entrepreneurship was heavily sanctioned in the former GDR (and socialist notions of public ownership of all production means were omnipresent) this cultural change of welcoming individual business activities was probably the most significant change to pre-reunification times. Retrospectively, FSU and EAH – the latter being the first university of applied sciences which was founded after German reunification in this former Eastern part - have had and still have a significant influence in building and nurturing an innovation-friendly environment.

Activities Undertaken

Through the complementary nature of the different specialisations of the two partnering institutions novel transfer potentials and cases are identified and realised on a recurring basis. As a means to improve and intensify this long-term, the interdisciplinary Nucleus Jena project – together with the different involved departmental units and actors in both HEIs – has developed and applied various activities to foster UIIN in the region:

- Information events for researchers and personnel as well as business and civic society to inform on support mechanisms and structures within the institutions and beyond for e.g. university-industry projects.
- Big-Picture activities to sensitise actors on the relevance of transfer processes to shift and leverage their mindset towards a positive perspective on transfer-related issues.
- "Werkstattgespräche" (= workshop talks): researchers have the chance to get in direct contact in a half day visit with local SME, matching their research interest, in order to e.g. identify potential common research projects or to enable future HR exchange programs.
- Matchmaking between higher education researchers and local SME to successfully apply to publicly funded projects.

On an educational level a couple of support and information offerings and structures in the HEIs exists, too. Dedicated teams exist in both Nucleus institutions which target the following topics:

Entrepreneurial education:

- Practical knowledge about companies and entrepreneurial decisions & strategies.
- Entrepreneurial skills for future business leaders, company founders and decision-makers in the public sector with contact to the business community.

MINT Camps for the future generation of UIIN actors and researchers:

Teenagers in the age of 14-16 can participate in yearly summer camps of one week to learn extra-curricular content in STEM topics with a specific deep-dive topic e.g. robotics.

Outcomes and Impact

A general impact assessment is difficult to make since there is no controlled laboratory environment which allows to eliminate any side-effects which might have an impact, too. Nevertheless, a couple of noteworthy observations can be shared. For instance, an increase of transfer-related activities across institutions could be detected in the past four years of Nucleus Jena's existence and, in many instances, the support structures of this project were seen as highly relevant for innovation and transfer success by the targeted actors. Also, individual initiatives from both institutions FSU and EAH like e.g. the International Startup Campus ISC (https://internationalstartupcampus.com/) or the startUpLab by EAH (https://www.eah-jena.de/startuplab) were able to receive additional input as well as further communication reach on (social) media channels through cross-advertising of services and events. Finally large national and international events such as "Set up: Jena – Gründungs- und Innovationstag" (Innovation and Entrepreneurship day) or the "Born Global Startup-Festival" were organised in cross-functional teams with a significant share carried out by individuals from Nucleus Jena. These events helped in further establishing Jena as a transfer hot-spot and to further spread the (open) innovation culture.

Moreover, FSU and EAH are also cooperating intensively in the development of common study tracks and in the supervision of cooperative PhD programs. Even though this field of interaction is not a field of activity within Nucleus Jena, the cooperative co-working mode established through common projects paved the way for more integrated, even governance-based partnering activities.

Externally Nucleus Jena has been able to motivate and incentivise to participate in activities, too. The service offerings are free of charge and therewith, represent at minimum an added value for involved actors. Feedback from the community shows that the services are valued remarkably as they can e.g. save a lot of time-consuming activities such as partner-matching, provide valuable insights.

Lessons Learned

FSU and EAH are located in East Thuringia, a region that has been affected by the aftermath of the German reunification like similarly structured regions have been. In particular, the regional economy had to adapt to a completely different economic system in the early 1990s while struggling with a general lack of modern (production) technologies in the industry due to investment backlogs under the former regime in the GDR. UIINs in our understanding today were almost non-existent in these times. However, 25 years later the federal support program "Innovative Hochschule" certainly provided an adequate incentive scheme as well as the necessary kick-off energy to create a more integrated and coherent approach towards institutionalised UIIN partnerships.

At the same time, it became obvious that regarding innovation culture and all its interrelated aspects such as risk-aversity etc. the initially planned project time frame of five years would not suffice to fundamentally change such deeper notions within individual actors. However, Nucleus Jena was the stimulus and through various sub-projects and partnerships formed the wave of a culture of openness - even when it comes to highly ambitious innovation projects - has grown constantly. Today both HEIs can detect more e.g. projects from their institutional workforce with transfer elements being initiated compared to pre-Nucleus Jena times.

Summarising, the input and trigger of a federal support program for such types of HEI cooperation combined with the ultimate goal of an improved innovation and knowledge transfer surrounding is highly remarkable. This shall not mean that without the program there would not be any kind of UIIN activities in Jena and its surroundings. However, from today's perspective it can be stated that this specific program was able to create a momentum from which the whole region benefits today and will continue to benefit from in the future.

Conclusion and Future Outlook

The further development and constant establishment of an (open) transfer culture including improved UIIN is a challenging task for the upcoming years due to the very nature of ecosystem development: always welcomed but difficult to finance. Whereas the local, federal province administration sees the necessity but appears reluctant to ramp up their engagement significantly, the recently elected German federal government has already provided plans to improve the national knowledge transfer system: The various support programs and structures shall be harmonized to create leveraging effects (e.g. creation of a national transfer agency). This can substantially improve the environment within which FSU and EAH are already investing capacities: to enable larger transfer networks, to attract more talented individuals to engage in the field and to be able to work with the available budgets more efficiently through bundling of activities etc. However, it remains to be seen how soon they will be realized.

ACTUATOR: Nurturing the VDL and University of Twente partnership

This case demonstrates an effective university-industry collaboration within high-tech industries and successful ingredients for aligning culture and road maps.

Authors: Michiel Pieters, Jaap Brand

Region: Europe

Developing and nurturing strategic partnerships

Background and Objectives

Since the appointment of a fellow position in 2019 (news item), the family-owned multinational VDL group and the entrepreneurial University of Twente are intensifying their collaboration with an integral approach. VDL Enabling Technology Group (VDL ETG) and the University of Twente (UT) expanded and strengthened the global competitiveness of the Dutch high-tech sector by working closely together with an integral partnership approach, aiming to:

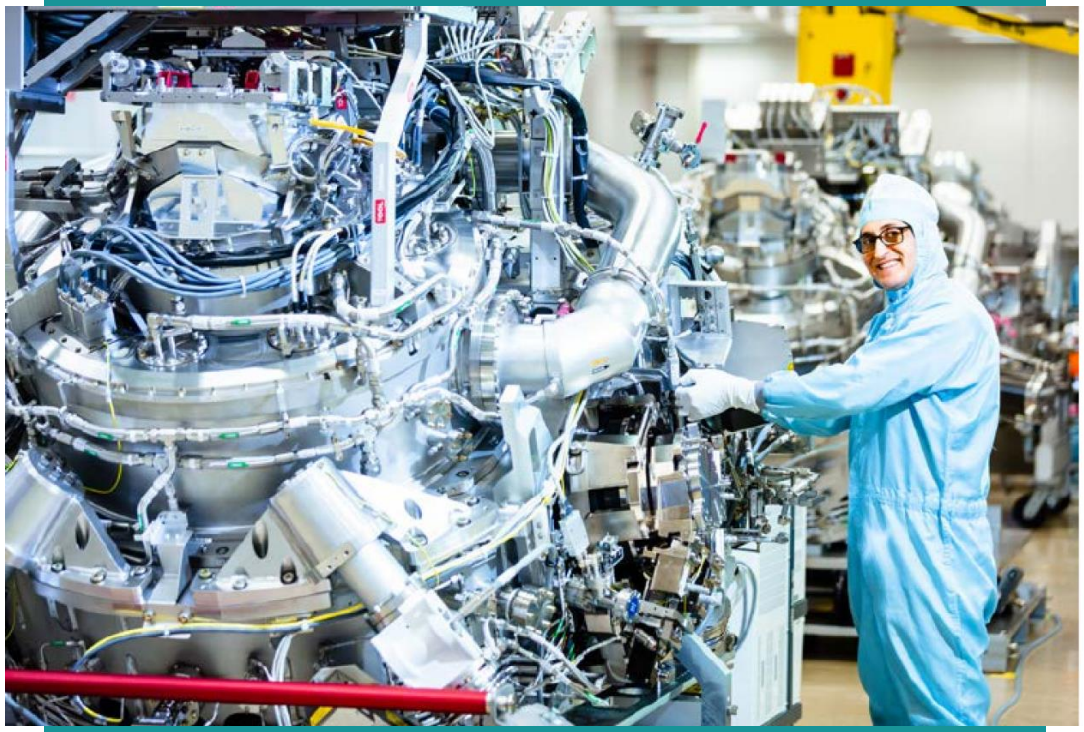
- understand each other's goals and challenges to both achieve new heights;
- support each other and join forces on research, talent, road mapping and lobbying to become more effective and successful in tapping (public) funding opportunities and have more impact on society and industry;
- raise our profiles on regional, National and European level;
- connect academic and industrial practice, and integrate on relevant topics (technical, skills) we can stimulate and develop talent in (finding) their career paths and fulfilling roles, being part of the shared future technology ecosystem.

Over time, the partnership evolved from a regional collaboration to a group level partnership where multiple VDL companies are involved in co-developing research & talent strategies and programs. An important success factor in this collaboration is the nurturing of interactions and relations at all levels in the organisation, supported by a governance structure and dedicated account team.

Activities Undertaken

This case study demonstrates the evolvement of a partnership over 3 years. The partnership started with a fellowship as a bridge position between VDL Enabling Technology Group (one of VDL group's companies) and UT, focusing on regional collaboration in the high-tech/ semicon industry. The partnership governance fosters board-level meetings as well as working groups on R&D (defining topics of joint interest and design programs/projects) and Talent (identifying needs and design journeys of multiple interactions between the company and students). This partnership flourishes without a predetermined Framework Ag; through identifying the right stakeholders and facilitating interactions, a base was created to nurture (new) initiatives with motivated staff and finding ways to make them happen.

The partnership with VDL ETG is expanding to a VDL group level alignment of various research & innovation topics, like advanced materials, high tech equipment, smart industry, robotics, energy systems, and energy storage. The account team focuses on content and process support, connecting the right people (stakeholder management) and developing propositions for collaboration and their funding acquisition strategy.



@VDL Enabling Technologies Group

Outcomes and Impact

Despite Covid, the partnership has so far resulted in (not comprehensive):

Education

- University classes joined by VDL employees > educate and inspire industry staff on new/upcoming technology/developments.
- VDL guest lectures in UT programmes > educate and inspire UT staff/students on industry challenges.
- Talent working group established with first meetings on company-student interactions sharpen needs (offer-demand):
    - 10 ongoing internships.
    - 20 students hired in last the 12 months (making VDLs strong growth ambition happen).

Research

- R&D program ACTUATOR: a ~4Meu high tech equipment R&D program, co-funded by the Dutch Topsector HTSM (see news item).
- 5 Ongoing projects and several pending project applications with different public funding agencies.
- Investigations ongoing on several topics.

General

- Learning to understand each other's culture and language.
- Expand collaboration from VDL Enabling Technology Group to VDL Energy Systems and VDL Enabling Transport Solutions, and VDL group, expanding the scope of the topics of joint interest.
- Collaborative efforts towards national big funding schemes (growth fund, IPCEI micro-electronics).

Lessons Learned

The first ideas of strengthening the VDL-UT collaboration were based on a contractual partnership. The decision to work with governance with committed people accelerated the collaboration because we did not have to go into negotiation on a conceptual level. This allowed the partnership to grow more organically and, along the way, determine which department/faculty/institute or group company needed to be involved or informed. For each R&D program, a contract is established. We monitor the overall collaboration and update the steering group bi-annually.

Understanding each other's needs and organisational dynamics is very important in nurturing good collaboration. This takes time, and we invested energy in getting to know each other at all levels and understand each other's roadmaps to involve people at the right time with the right trigger. What drives the board? What drives the research department? What drives the student? Transparency, humour and a we-will-make-it-work mentality are important assets.

Conclusion and Future Outlook

We hope that post-covid, the collaboration can further grow and become more visible. With the outlook of organising more physical meetings again, we hope to become more effective in making new connections between individuals and departments.

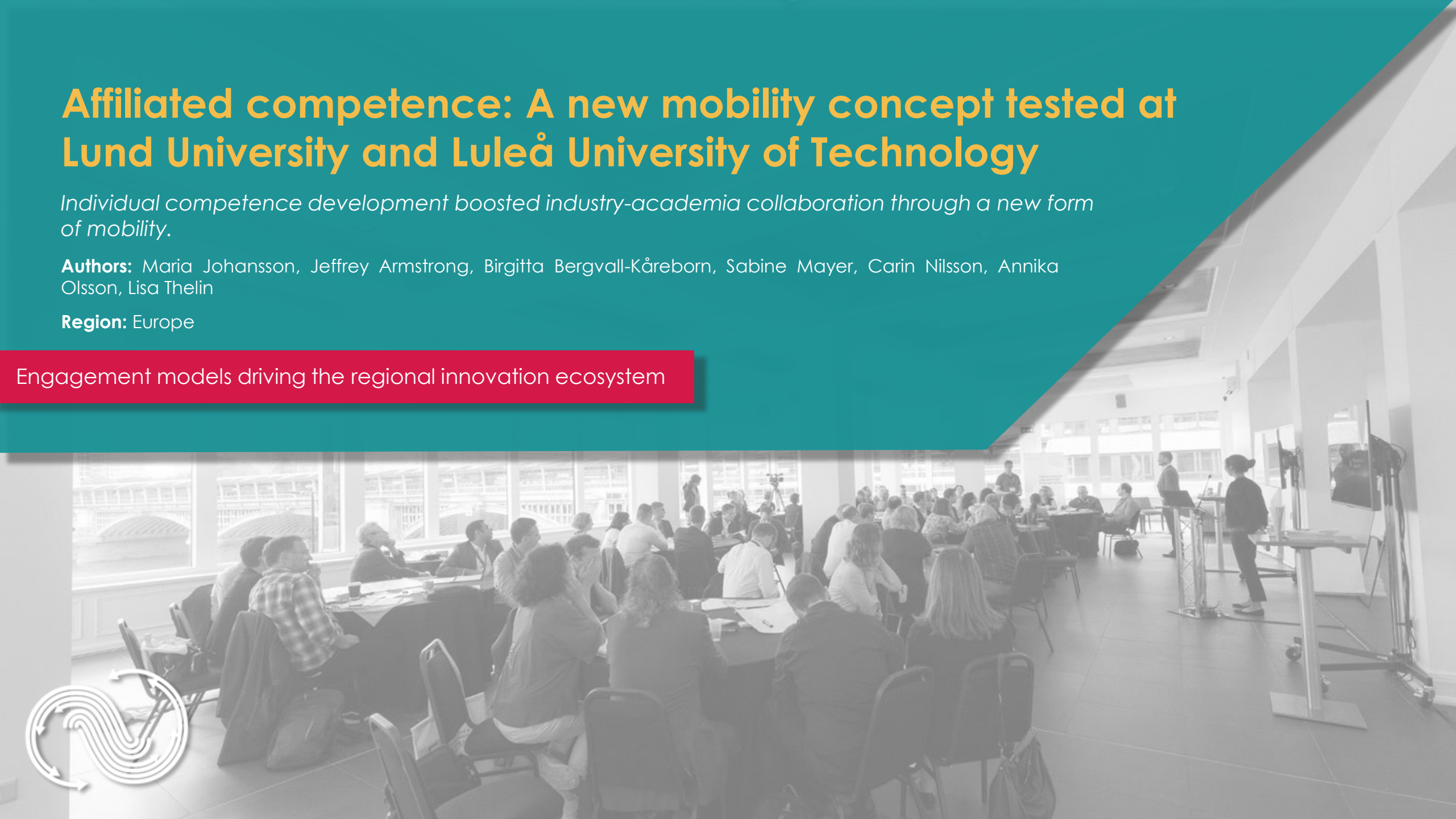
Affiliated competence: A new mobility concept tested at Lund University and Luleå University of Technology

Individual competence development boosted industry-academia collaboration through a new form of mobility.

Authors: Maria Johansson, Jeffrey Armstrong, Birgitta Bergvall-Kåreborn, Sabine Mayer, Carin Nilsson, Annika Olsson, Lisa Thelin

Region: Europe

Engagement models driving the regional innovation ecosystem



Background and Objectives

This Initiative Good Practice Case Study describes the development and implementation of a pilot study for a new concept of mobility from industry to higher education institutions. The concept is called affiliated competence. Affiliated competence constitutes a new form of mobility based on individual competence development as a basis for strengthened collaboration between higher education institutions and the business community. Affiliated competence is based on a fixed, formalised process with mutual values for both the individual and the organisations in focus. The concept was developed in collaboration between Lund University and Luleå University of Technology, who also performed the pilot study. The project was financially supported by Sweden's innovation agency Vinnova.

The first idea and need for the concept arose from the sudden large pool of key expert employees in industry being taken out of the workforce due to the pandemic situation in 2020. The Swedish authority The Ministry of Enterprise and Innovation allocated support to companies who, due to lack of work, offered employees competence development during working hours. Lund University and Luleå University of Technology was highly motivated to show their support to Swedish industry during this situation and at the same time strengthen collaboration with industry for a common future development in a post-covid society. The concept may, besides describing a model for initiating, broadening and strengthening collaboration, contribute to lifelong learning.

Activities Undertaken

The development of the concept included two parts: mapping of conditions and implementing a pilot study (testing and evaluating the concept) at two sites. The first part of the project included mapping legal issues and aspects related to HR, communication, development of processes for recruitment of candidates, including application and match-making, and management. The second part of the project focused on conducting the pilot, including the development of a process for follow-up.

Some examples of questions dealt with relating to the format are:

- Who could be an affiliated competence?

Processes for recruitment, application, selection and matchmaking were developed, supported by HR staff members.

- What kind of activities could an affiliated competence be engaged in? Which activities must be excluded?

The affiliated competence had employment in a company and was expected to spend up to 20% of his/her working hours at the university as part of his employment in the company. An affiliated competence was not allowed to perform any work that normally should be performed by university staff. Issues related to insurances, laws and regulations were investigated by the legal department.

- Does the new concept successfully enhance industry-academic collaboration at the same time as it increases the individual competence, and if yes, how?

A process to follow up the concept on an individual and institutional level was developed. Before starting the affiliation period, the affiliated competences wrote an individual development plan. The plan was written in dialogue with the appointed academic contact person and their boss at the company. Group meetings and individual interviews were conducted with all participants, including affiliated competences, their contact persons at the university, and their bosses in the companies, to gather expectations in the beginning and lessons learnt at the end, including follow-up on the competence development plan.

Outcomes and Impact

Nine affiliated competences were included in the pilot during November 2020 to January 2021.The affiliation period varied from four weeks to five months. The affiliated were employed at seven different companies and were affiliated with six institutions at two universities.

Several outcomes were noted based on the affiliations. For the university and the academic contact person, the deepened conversations with the affiliated competence providing industrial perspectives to the research area were of great value. Other values include: the development and implementation of a new joint Master degree project, initiation of joint research applications, and increased insights and understanding of methods and needs in industry, which in turn increased relevance and awareness in both research and education.

Several of the companies mentioned value-added from the concept, in particular, related to the possibility to offer employees skills development, not only providing an opportunity to retain an experienced employee but also the spill-over to other team-members. Some companies mentioned value-added related to increased knowledge of new research to be incorporated into the development of new services or products. Industrial access to laboratories has also been valuable during the pandemic.

Other added values emerged, unplanned or expected values that can be seen as synergies that have arisen despite the limited time. These values are expected to contribute to important future developments. Some examples: a company redistributed internal funds and initiated in collaboration with the university a joint doctoral project; a company, without any previous collaboration with the university, initiated and began a joint Master degree project; the in-depth literature studies by the affiliated together with discussions between the affiliated, his university contact person and a doctoral student led to that the doctoral student was able to further develop a course in a way that would not otherwise be possible, thus providing added value to the doctoral student's subject area.

Lessons Learned

There are few programs and tools that enable mobility to the university for employees in business in a formalised but simple way. The described concept is a new opportunity to accelerate collaboration between business and academia using a smooth rapid process for handling. The pilot study clearly showed that expectations of the participants were met, and that value was demonstrated in academia and industry.

One success factor was the efforts and resources allocated in match-making. It should be emphasised that the concept should be looked upon as a strategic tool to be used with quality rather than quantity. Each affiliation must be hand-picked, and time must be invested to create and support the relationship. Time should also be allocated to manage expectations.

Another success factor was the process for follow-up on the individual affiliations. The follow-up was greatly appreciated and a lesson learnt is that such a process can be valuable also in other forms of mobility exchanges e.g. adjunct positions.

The universities also learnt that a successful affiliation is independent of educational level. Persons with professional business skills, with or without an academic degree, can contribute with important business perspectives in an academic context. However, it is of utmost importance that the practical skills are valued by the receiving part and that the dialogue is conducted on equal terms.

Based on outcome and lessons learnt we conclude that the concept can be used as a strategic tool to initiate, broaden or strengthen collaboration between university and industry. The concept should, preferably, be used in environments that are mature with respect to collaboration. Quality in relationship is a keyword. The concept is exclusive - it does not intend to be a model that fits all or include many people – however, wisely used, unique results can be obtained and highlighted.

Conclusion and Future Outlook

The results obtained from the pilot study show with great clarity that the concept has contributed to creating lessons and value for both the affiliated participants, their contact persons at the universities and for their managers in industry. Despite the limited scope of the pilot study, the results confirm the potential significance of the concept as a strategic mobility tool and part of a future national mobility initiative. The need for a mobility tool from business to academia is judged to be large and the interest shown in the concept has been very large from other universities and societal actors.

A future outlook shows that the concept will now be tested further at Lund University. Broadening the scope to other disciplines also means that the concept will be further developed to meet the needs of other types of organisations, e.g. national authorities, municipalities and other societal actors.

BRISTOL MODEL: Creating deep civic relationships in Social Science through student engagement in knowledge exchange

Learn how the Faculty of Social Sciences and Law is moving relationships beyond the transactional through co-produced student research with partners in the Bristol city region.

Authors: Alexander Paterson

Region: Europe

University-business collaboration in education

Background and Objectives

The Professional Liaison Network (PLN) is a department in the Faculty of Social Sciences and Law at the University of Bristol, that connects external partners to engaged learning and academic research. In doing so it has created an ecosystem of social science-specific relationships with external organisations. Through a method of co-produced knowledge exchange, these partnerships get social sciences out into the world

A conversation with the Youth Services division of Bristol City Council (BCC) led to the creation of a novel method of co-produced academic research, which brings undergraduate social scientists into the research process as Research Assistants. In this case, working on a project which would have a real-world impact by enabling the Council to make better (and more targeted) investment in youth services provision. What started as the suggestion of a one-off quantitative survey ended up as a longitudinal study of both vulnerable young people in the city and the organisational resilience of youth service providers.

Through this pilot project, we uncovered multiple positive impacts for students, external partner organisations, and academic researchers, resulting in closer relationships between the partners and the University.

In 2020 we extended the Bristol City Council pilot to incorporate seven projects, each co-produced with a separate external partner and using the same model of knowledge exchange. One project, led by academics in the University of Bristol - School of Education, is a formative evaluation of the effectiveness of the model and will analyse and evidence the direct benefits/impact of involvement in KE activity on students and external partners. It will also demonstrate the potential sustainability and scalability of the model beyond its external funding period and provide a practical template for continuing these types of projects on a larger scale, embedded in the curriculum, for both UoB and other HE institutions.

Activities Undertaken

The project required a process of facilitated co-production between external partners, academics, and students to scope, design, and develop individual projects.

Due to the pandemic, there were numerous challenges experienced along the way, for example, research had to be halted during the peak of the pandemic, and one partner organisation (Wellspring Settlement) switched from delivering community workshops to community medical distribution.

There is a strong focus on benefiting students from less advantaged backgrounds, and throughout the project, we have amended processes to do so. For example, By up-weighting applications from students with widening participation (WP) characteristics.

Crucially, we have discovered that the knowledge exchange projects have deepened relationships with our partners. This has led to a high number of 'splinter-projects' and additional activity that has driven impact and positive outcomes for partner organisations. This demonstrates the power that social sciences research can have when it comes into direct contact with the real world, particularly when projects are closely aligned with the core mission of the organisation.

The Bristol Model project is now in its final year and the seven projects are beginning to realise research outputs and impacts. For example, the project with Voscur has released a report on the impact of covid in key areas such as homelessness and an event launch will be held in March 2022. A project with Black South West Network (BSWN), a community anchor organisation focused on racial equality, has released a toolkit that can help other organisations to better use and understand datasets and impacts on racial minorities.

Outcomes and Impact

The Bristol Model has had multiple positive impacts, which vary depending on the setting and stakeholder.

Students gain direct experience of cutting-edge social sciences research in action. Taking them out of the traditional learning setting and into parts of the city and economy that they would not have otherwise come into direct contact with. For some students, experiences have changed the direction of their life and career. Experiences also support academic studies and learning, enabling students to see the impact of their degree in the real world.

External partner organisations benefit from the full rigour of academic social sciences research to solve fundamental challenges. For example, the BSWN project focuses on "the need for better data to address regional race disparity". The projects are core to the mission of the organisations and bring in cutting-edge academic expertise – combining this expertise with their own creates synergies of knowledge and understanding. This enables the organisation to stretch beyond what was previously possible.

The University benefits by creating life-changing experiences for students, research impact and knowledge exchange and long-term relationships with external organisations. This places the University at the centre of the regional innovation eco-system.

Academics benefit from the knowledge of external partners, recognising that our non-academic partners have important insights and expertise about the issues to be explored and how we should explore them. Relationships built through the project support the wider research aims of academics and create pathways for their research to create impact.

Lessons Learned

External challenges

The pandemic was the main challenge either directly or indirectly. Face-to-face research was not possible for long stretches of time. "Workarounds" were often possible using online tools, but sometimes this was not the case, for example, when working with vulnerable or disadvantaged groups. The pandemic also made relationship building more challenging, both between the organisation and the academic team and within the project teams themselves. However, all teams adapted well to the online environment, and the projects were often reconfigured to take into consideration the new environment. For example, one project paused their initial research plan and undertook an additional research project based on the pandemic. By being responsive to the needs of the external organisation trusted relationships were developed.

Internal challenges

The Bristol Model is different from other types of projects undertaken at the University - as a result, we came up against numerous internal process constraints, such as contracts. Similarly, internal methods for recruiting students to projects were also limiting. However, through this project, we created best practices, and the project enabled difficult conversations to take place, shining a light on internal challenges and enabling the institution to make improvements. For example, on one project we recruited a PhD student through an external company, which enabled that individual to build closer ties with the organisation and get closely involved in the company culture.

The main factor in leading to success has been our iterative approach to project management, trying different approaches and reviewing regularly, always keeping the relationship and core mission of the organisation in view. A key finding is that flexibility is integral to the success of a relationship and project. Structures which enable flexibility are vital in making this happen.

Conclusion and Future Outlook

The Bristol Model projects have had a significant positive impact on the students, academics, and external organisations involved, resulting in clear tangible outputs for partners and enabling them to stretch beyond what was previously possible. The project has been a catalyst to bring different groups together and giving them the space to create mutual value in an equitable way.

Our objective for the Bristol Model is to expand the project and make it sustainable in the long term by bringing this type of experience into the curriculum. This will require changes, both in terms of internal institutional processes and redesigning the way in which our curriculum is constructed. This is timely, as the institution is already looking at decomplexifying the curriculum to enable greater pedagogical innovation.

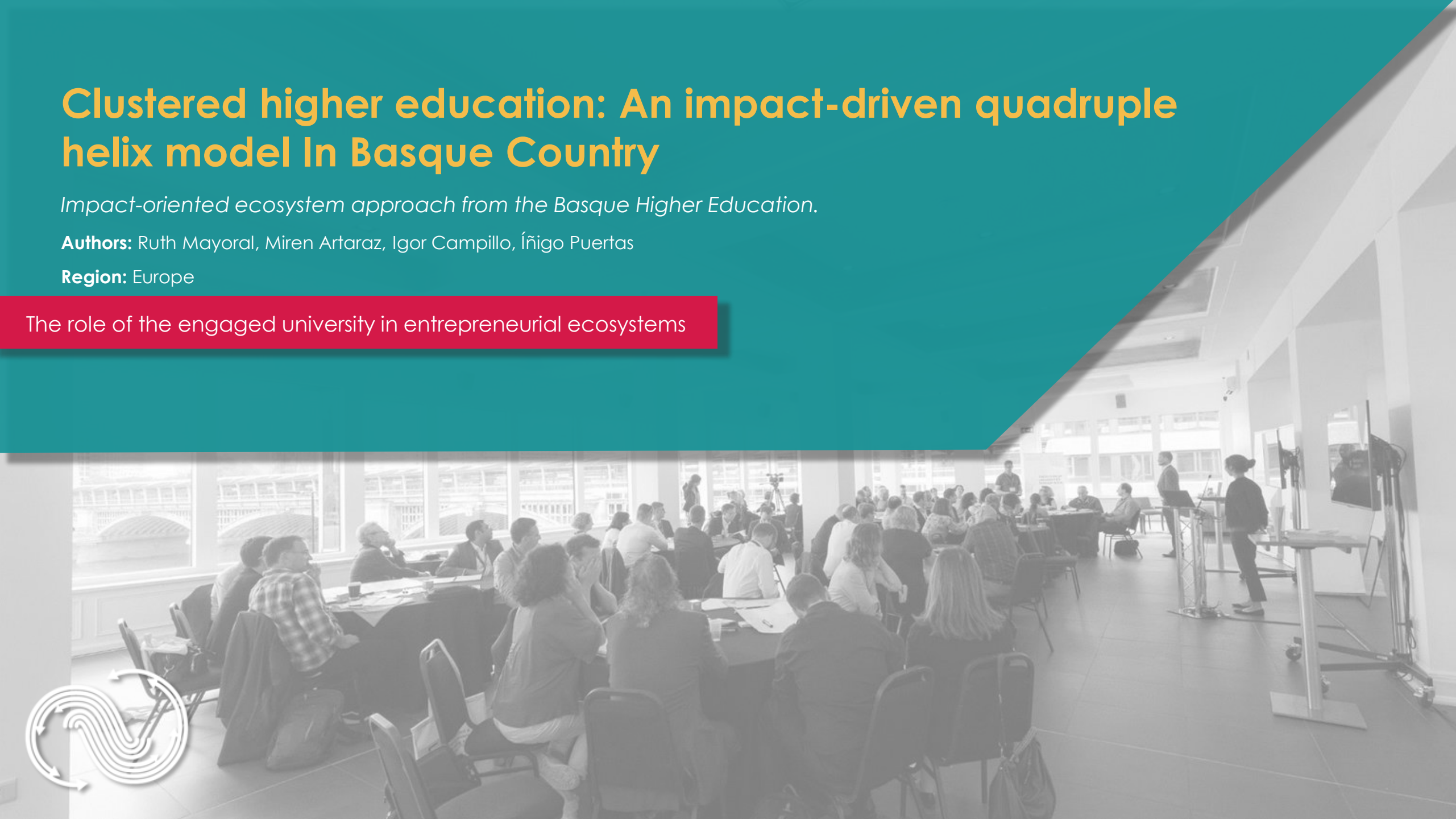
Clustered higher education: An impact-driven quadruple helix model In Basque Country

Impact-oriented ecosystem approach from the Basque Higher Education.

Authors: Ruth Mayoral, Miren Artaraz, Igor Campillo, Íñigo Puertas

Region: Europe

The role of the engaged university in entrepreneurial ecosystems

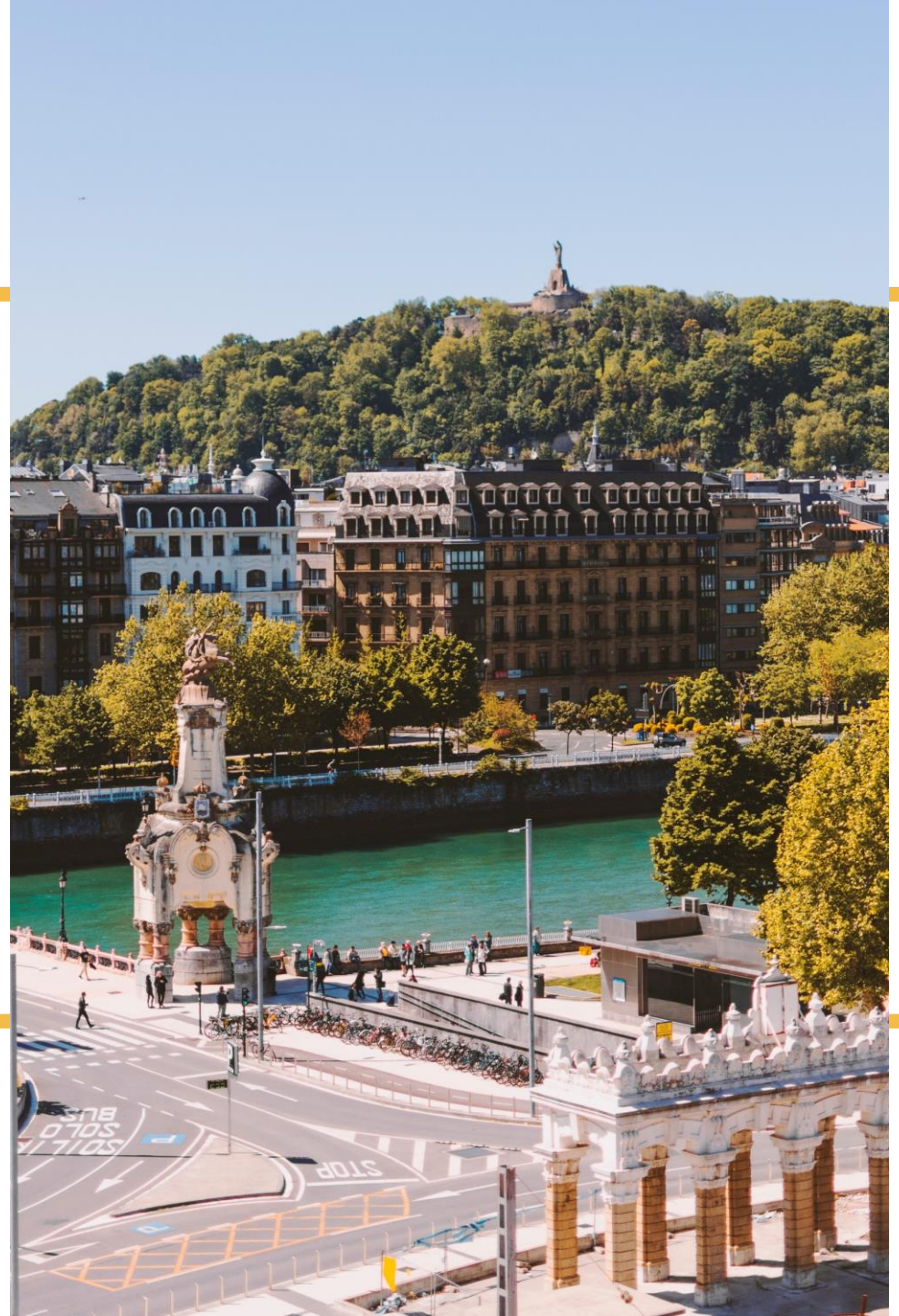


Background and Objectives

In an increasingly globalised scenario, more public, private and social actors face the need to implement collaborative actions aimed at deploying smart specialisation strategies, and the generation and transfer of value to society by higher education and research. In this context, the Basque Country, with the leadership of Basque Government, has created a cluster body integrating the Basque Higher Education institutions to promote co-creative dynamics between universities, companies, public administrations and civil society organisations, boosting challenge-driven cooperative actions.

This model has established itself in a very short time as a benchmark practice of high-impact public-private cooperation. We can highlight a series of differential values:

- It is made by the Centres. This means that the level of dialogue is not that of the University as a super entity, but that of Schools and Faculties, which are the actual operative units.
- It works with an ecosystemic approach. For a greater and multidirectional transfer of knowledge, by transcending the logic of each particular entity.
- The proposals are based on co-creation at all levels engaging multiple actors at different scales (government managers, deans and directors, professors, industry professionals, and students).



Clustered Higher Education: An Impact-driven Quadruple Helix Model In Basque Country

The initial fields in which we are working in these multifactor dynamics are related to Industry 4.0, through our 4gune cluster, and the Culture and Creative Industries, with our KSIgune cluster.

The major goal is to work consistently and in alignment with the regional strategy, whilst maximising the impact of our projects on the social challenges that the Basque Country faces such as the technological and digital transition, the energy-climate transition and the social and health transition. To analyse how progress is being made in this regard, it is essential to develop an impact management system that allows us to understand how our impacts are being generated and what direction they should take.

Activities Undertaken

Inspired by these core values, both clusters carry out the following main activities:

1. **Mapping the training, research and transfer capacities of the Faculties and Schools related to Engineering, Science, Technology and Culture and Creativity.** These maps reflect the detailed reality of the Basque Higher Education System around smart industry and creative and cultural industries. This was the first step to promote a greater transfer of the value generated from the Higher Education to the Territory from the creation and strengthening of strategic alliances. The operation of the map allows to see the Higher Education offer in terms of value chain and demand-pull instead of University offer.
2. **Challenge-driven programs:** The objective of these programs is to bring the Higher Education closer to the companies and other entities and agents, promoting practical collaboration and favoring cross fertilisation between fields and sectors, as well as engaging students in the process.
3. **Ad-hoc training Cooperative Programs:** These training programs are designed, managed and accredited by a set of Schools and Faculties from different Universities working in cooperation. They can be Life-Long Learning Programs or postgraduate degrees responding to the demand of the agents integrated in the clusters that represents different sectors and strategic fields.

As a transversal action, an ad-hoc impact evaluation system is being implemented to register and contrast the achievements and effects reached through the clusters actions. The system enables the implementation of improvement actions for the better accomplishment of our purpose and stakeholders' expectations.

Outcomes and Impact

The main impacts registered are the following:

- A better interconnection of Higher Education, both among their departments, schools and faculties and with business Clusters and other organisations: new relational models are promoted overcoming the client-provider approach towards a co-leadership mode, adopting co-creation methodologies, and engaging students from early stages.
- Joint approach of the four Basque Universities and other Higher Education Centers in their relationship with other important agents in Basque Country (companies, government, CSOs), and with each other in order to promote competitiveness through cooperation adding forces based on their strengths.
- Flexible university training programs for different professional profiles are allowing the transition and adaptation of the Basque industry to the present and future challenges.
- Favoring the positioning of the Basque Country as a region in which different interest groups and agents cooperate to improve the wellbeing of its inhabitants.

Organised into the three large activities described above, during the four first years we can highlight, among others, several outcomes.

1. **Maps of training, research and transfer capacities benefits different agents:**

- For students, it is a tool to analyse the training offer of the Basque Higher Education System.
- For companies, a useful tool for the identification of the training offer, the research groups and facilities.
- For Higher Education Centers, serves as a showcase to give visibility to their programs.
- The Map is the gateway to other projects in collaboration with the clusters. The map includes:
    - 11 University Centres of Science, Technology and Engineering involved.
    - 21 Higher Education Centers Cultural and Creative Industry related.
    - 460 Higher Education capacities (training programs and research and transfer groups).

2. **Challenge-driven programs:** More than 30 entities are behind the cooperative projects and more than 100 professors, and 500 students have been engaged so far.

Lessons Learned

The main lessons learned are the following:

- Higher Education as a launching pad for innovation: It creates opportunities for innovation through the generation of intersections, the design and deployment of meeting places.
- A relational context is generated between the University and the Basque institutions, the companies and the entities of the different sectors. This in turn supposes a maximisation of the impact of Higher Education in these sectors and in the deployment of the Basque Smart Specialisation Strategy.
- In very practical terms, this also serves to:
    - Identify and prioritise new research opportunities that respond to the needs of the Basque Country companies and entities.
    - Activate and enhance a multitude of disciplines from different areas of knowledge that are part of the ecosystem of these Industries.
    - Add value to existing research and strengthen research and training projects.
    - And to conclude, cooperate in a fluid way tending progressively to the creation of a community.

The main challenges identified are:

- In a context of a coexistence of the logic of cooperation and competition between universities, boosting a joint approach of the four regional Universities and other Higher Schools in their relationship with leading companies in the industrial sectors. In short, the promotion and realisation of an ecosystemic approach.
- Make co-creation effectively work at the different scales considered in a coherent way.

Regarding the success factors:

- Engagement of the universities and centers of the Cluster in the whole cycle of the initiatives.
- Systematisation of co-creation processes and methodologies in each of the activities.
- Connection with the stakeholders of the Basque Science, Technology and Innovation Network.
- Political leadership and institutional support from the Basque Government and the contribution of an overall vision of the Basque Higher Education System.

Conclusion and Future Outlook

We have achieved the promotion of an action model that mixes analysis with prompt interventions in an ecosystem context concentrating resources and effort.

4gune and KSIgune clusters promote methods and tools to favor the transfer from Higher Education to the territory and generate the appropriate context for the multiple agents for co-leadership and co-creation in initiatives adapted to the needs of our territory. A change of mindset, combined with a coherent praxis, shows that collaboration together with competition is possible also in a small region as ours.

Now is the moment to broaden our operating range, including other agents and maximise our impact area. Because of that, these two clusters are working in a specific methodology for the evaluation and management of their development with based on social and economic impact. This is a key element of the Basque Strategy which is fully committed with social transformation.

Developing effectiveness principles for development and evaluation of Melbourne Connect

The complexity of partnership networks demands a principles-based approach to measuring success of innovation precincts.

Authors: Andrew Turpin, Paul Gruba, Georgia Von Guttner

Region: Australia

Managing and measuring external engagement

Background and Objectives

After nearly a decade in planning, the launch of Melbourne Connect in 2019 is now the home of a complex ecosystem comprising over twenty commercial and academic operations. Consciously, Melbourne Connect embraced the complexity of its ever expanding operational and management capabilities. Our embrace is deliberate and, borrowing from complex system theory, hopes to foster emergent behaviours that will improve society yet cannot be easily predicted or planned.

From the start, we understood that coordinating, motivating and measuring the overall success of several disparate participants could not be distilled into simple metrics without restricting the opportunities to innovate and losing "the magic" of being connected. Working across the ecosystem, we developed a principles-based approach to underpin a Theory of Melbourne Connect (ToMC). Briefly, our theory defines what high-level activities need to take place for success of the ecosystem, a set of principles that if followed lead to desired behavior of the participants towards these activities, and an evaluation framework that can measure progress towards adoption and efficacy of the theory.

The work draws heavily on the work of the Centre for Theory of Change (www.theoryofchange.org) for backwards mapping; "Principles-Focused Evaluation: The GUIDE" (Paton, Guilford Publications, 2017) for developing and testing principles; "Understanding Innovation Ecosystems: A Framework for Joint Analysis and Action" (Hoffecker, Cambridge: MIT D-Lab, 2019) for validating principles will lead to suitable behaviour in an innovation ecosystem; and "Global Alliance for the Future of Food, Principles for Food Systems Transformation: A Framework for Action" (Global Alliance for the Future of Food, 2021) for developing worksheets that can be used by a variety of actors for evaluation against principles.

Activities Undertaken

Utilising backwards mapping we constructed both initial and intermediate goals and linked them to the prime aim of framing what it meant to achieve success in our innovation precinct. Following that process, we then grouped our collective goals into thematic groups to identify where the particular behaviours of individuals would contribute to the overall success of Melbourne Connect. To illustrate, we focused on an individual who may be encouraged to help us all meet the relative short-term goal of creating publicity for an upcoming event, but then – and this is crucial – be able to contribute to the longer-term goal of seeking policy changes in ways that sustain innovation.

Out of each thematic group, we then brainstormed and revised, and revised again, a set of principles. To this preliminary set, we then applied the GUIDE criteria. Accordingly, we sought to develop each principle such that it was: Guiding, Useful, Inspirational, Developmental and Evaluable. Further, we also checked and assessed that the eight key roles in the D-lab Local Innovation Ecosystem Model could, in fact, emerge through an alignment with each principle.

Once the seven principles were set (Connection, Mutual Support, Resourcefulness, Advocacy, Innovation, Sharing, Future Focused), we then sought to translate the principles into our local operating environment as useful worksheets. The worksheets have one row per principle with columns that encourage reflection on possible results of decisions. It is designed as a structured way to think through implications of decisions for the precinct, ensuring adherence to the principles. Often, we saw ways that refinement of an initial idea led to the emergence of new pathways over the course of our discussions.

In addition to the general-purpose worksheet, we developed criteria for specific operational teams that linked to that team's KPIs.

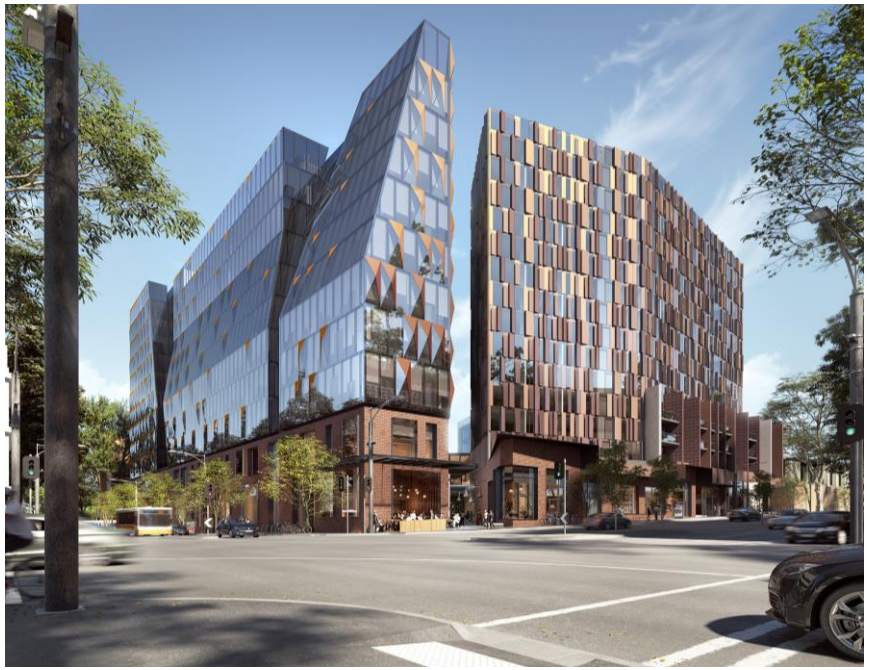
Outcomes and Impact

The dissemination of the principles model throughout the entire precinct is a work in progress. However, there are three main areas where there are tangible outcomes from this approach.

The first is at a high level, galvanising the precinct leaders with a clear Theory of Melbourne Connect in a way that shallow metric-based approaches or substance-light strategy statements do not. In addition to a clear statement of strategy and purpose in the TOMC, there are tangible artefacts and processes for applying the strategy that do not constrain or limit the complexity of the ecosystem. The Theory also allow easy explanation ("marketing") of the precinct to external parties.

The second is as an aid to decision making. One example of a successful application of the principles approach has been in designing high level content structure for the precinct www site. As is natural, there are many competing interests for prominence on the www site, but by applying the principles there was a systematic way of deciding what is highlighted, and what drops to the second level. A second has been in the design of the data-collection framework in the CRM of MC, where relevant data can be highlighted as contributing to principles.

The final area of impact is on evaluation of success of the entire ecosystem. The complexity of the undertaking immediately raises the risk of any metrics (e.g. increased research revenue) being taken out of context and used as a target, driving perverse behaviours and undermining the Theory of Melbourne Connect. By assessing success by adherence to principles, we hope to avoid infantilisation of participants, giving them freedom to innovate while adhering to the Theory.



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Lessons Learned

Despite its use in many fields, promoting a principles-focused approach in Melbourne Connect has taken much effort, explanation and negotiation across a series of meetings throughout the ecosystem. Some partners, for example, have been sceptical that 'principles' could in fact be the basis for establishing a vision of excellence and collaboration. Others have questioned why traditional metrics have not simply been applied. Still others, however, have supported the approach as they see the need for fresh thinking in an era of increasingly complex demands. In short, though, the challenge of 'innovation' was expected to be fraught with doubt.

We overcame such challenges through a firm belief in the core premise: the world of research partnerships is, by design, complex and we must embrace such complexity. Accordingly, we consulted the literature – primarily in principles-focused evaluation – to gain a deeper understanding of key concepts and constructions. Secondly, we drew on previous experience at the university where we had developed initial frameworks. Third, and most importantly, we worked with key stakeholders at Melbourne Connect to explain and promote the need to consider principles-focused approaches.

Upon reflection, the main factors leading to were in fact:(1) commitment to a complex view of the ecosystem, (2) grounded understanding of the literature and previous experience, (3) working with stakeholders.

We anticipate our next challenges will be to 'translate' the widespread language of KPIs and the like into a common discourse of principles. Our initial stakeholders have understood us, but we now must continue to work for the long term to sustain the vision. We hope that elements of success, such as improved and positive collaborations, will bolster our argument that the effort to embrace complexity is worth the effort such a stance has taken.

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Conclusion and Future Outlook

By definition, an ecosystem has all participants working together to thrive. Using a set of principles gives a concrete method for people to work together without removing their flexibility of autonomy to create and experiment; it does not encourage gaming of metrics, infantilisation nor simplification. It allows and encourages complexity, embracing emergent behaviours, different timescales of objectives, and non-linear mappings of inputs to outputs.

Our work to translate the principles into more 'languages' of the ecosystem continues.

Developing general guidelines and tools for documenting merits from external engagement - A practical approach

A systematic approach to self-assessment, mapping and structuring of merits from external engagement.

Authors: Anna Bergstrand, Magnus Adenskog

Region: Europe

Tools and instruments to drive and measure external engagement

Background and Objectives

The Swedish higher education sector is in a phase in which the importance of external engagement for quality in research and education at universities has gradually become clearer. This development is also visible at the European as well as global level. It is, therefore, relevant to assess and value the work that takes place at universities within the framework of external engagement and to support the diversification of academic competencies and careers.

The work presented has to a large extent, taken place within the national project "MerSam-Meritvärde av samverkansskicklighet" (https://www.hb.se/en/collaboration/mersam/) involving 14 Swedish universities during 2019-2020. The overall objective of the project has been to develop knowledge, policy and practice for assessment of merits from external engagement with the long-term objective to develop a common understanding and framework on a national level. The project method has been exploratory, combining both individual and organisational perspectives in order to develop good practice and to stimulate a national dialogue on the need of a more structured and harmonised approach when assessing merits from external engagement. One of the project objectives was to develop and piloting a practical guide for academic staff on how to document and assess merits from external engagement using a flexible yet a systematic and structured approach. The guide includes tools that supports the identification of a diverse set of competencies related to external engagement, dissemination, and innovation in relation to the task of collaboration as stated in the Swedish Higher Education, Act as well as activities in research and education. Any national initiative, needs, however, harmonise with a global academic context. The guidelines and tools developed in this work are anticipated to be in line with and relevant for initiatives taking place within open science in the international arena.

Activities Undertaken

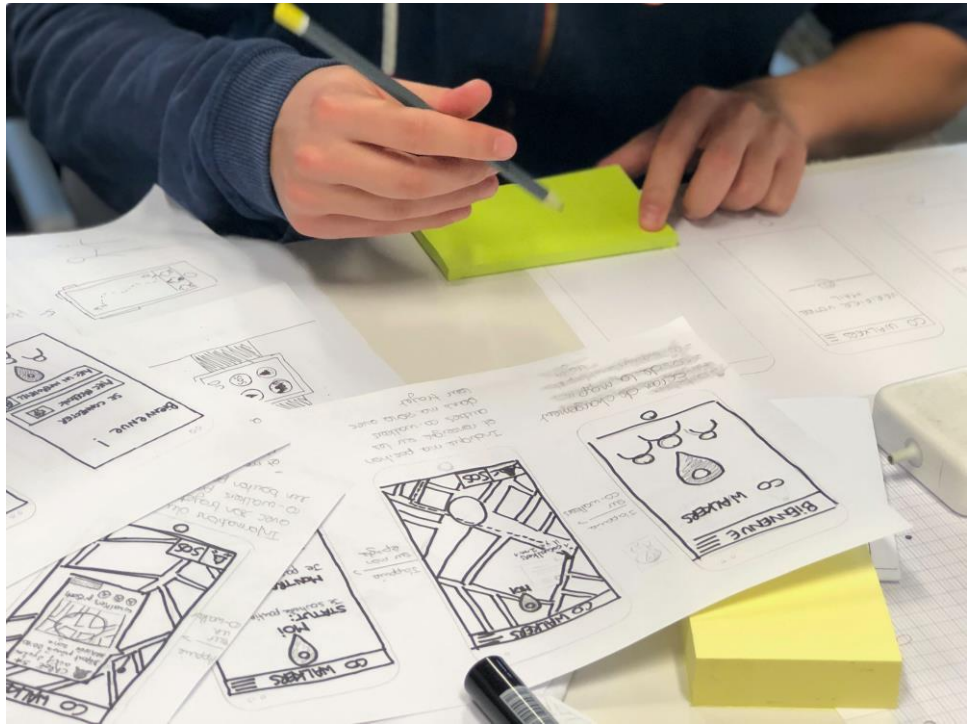
The MerSam project resulted in general guidelines and two concrete tools for researchers and teachers to document and structure their merits from activities within research and development in relation to external engagement. The guidelines and the tools were developed through a palette of activities at numerous Swedish universities, and learnings were made from both the development phase and an implementation phase.

During the development phase, a prototype of the tools and guidelines was tested through workshops with researchers and teachers at seven universities. The focus of this part of the project was to take in input regarding questions and challenges that researchers and teachers faced in their work when it comes to presenting their external engagement merits.

After finishing the MerSam project, the implementation phase started (and is still ongoing). In this phase, the results and tools developed in the project have been processed in numerous ways. This includes being involved in courses at four Swedish universities and workshops with innovation managers and university staff.

One concrete example is a course at Kristianstad University in the spring of 2021. The aim of the course was that academic staff (researchers and lecturers) should learn more about and practice how to present their external engagement. The tools from MerSam were discussed and used, resulting in relevant feedback for further development of the tools.

Another example, is a course that was conducted at the Faculty of Engineering at Lund University. In their employment, researchers and lecturers enrolled in the 'assistant lecturer track' (BUL) worked with the tools developed in MerSam. This gave us an opportunity to discuss the tools from the perspective of other researchers and lecturers, which gave input on how to develop the tools further.



Outcomes and Impact

One key output of the project was the guide comprising the general guidelines (documentation, case descriptions, and reflection) and the two tools for documenting and structuring merits from external engagement. The key outcome of the project was the implementation of the tools and the current work with the further development of these tools driving discussions on merits on a local as well as a national level.

In the part for documentation, the focus is on 'quantitative' measures, and the two tools developed are the "resource and impact matrix" and the "self-assessment diagram". The second part, case descriptions, researchers describe a selection of their external engagement in depth. In the third part of the guidelines, the researchers reflect upon their external collaboration and further development in a context. For example, how external engagement has influenced the quality of the department or your own work.

In the implementation phase, the idea was to start working with already recognised concepts such as "guest lecturing" and "patent". Departing from these concepts, the discussion on what kind of activities that ought to be recognised as merits begun and there were several discussions on how to develop the tools with new and/or better concepts for describing activities undertaken in external engagement.

Another form of impact in the implementation phase is that the project has contributed to the national discussion about how to assess the merit of external engagement at Swedish universities. This is visible in two ways. First, since MerSam consisted of 14 universities, the discussion within these universities begun with some concrete effects (e.g. one university created a new position as 'head of external engagement'). Second, the project has been invited to several universities to discuss the field's development field and how they can work to develop their strategic work.

Lessons Learned

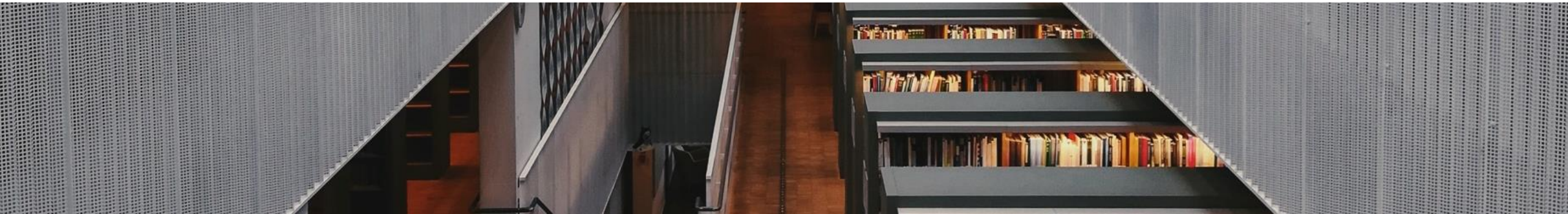
There is a need of a holistic approach, organisational incentives as well as cultural change.

One major challenge in the development of the guidelines and tools was the absence of a common national frame of reference regarding assessment criteria, supporting documents and praxis, as well as a general view on what is to be included as merits from external engagement. There was also a need for a more precise and developed terminology. For the organisation, a common understanding of terminology is important for clarity about overall goals and strategy and the link to standard practices. Moreover, it is important for the individual to be able to know which collaboration merits are to be documented and assessed.

Despite recent greater focus on external engagement, there were still unclear or low level of incentives for external engagement at the universities. This brings little incentive for the individual academics to use as a guide. Another challenge was the perceptions among academic staff as encountered during pilot work and interviews.

One common perception was that a greater emphasis on merits from external engagement on a university level would impose not only a heavier workload but also expectations on the individual academics to excel in yet another area.

One successful way to forward the knowledge has been the practical approach using workshops and feedback dialogue methods involving academic staff as well as university management but also stakeholders from the wider education sector. A broad constellation with diverse university representation and several university functions at the same table has been successful and key in the development work as well as in implementation workshops. The tools developed has a potential wide practical use as support in strategic discussions as well as individual career planning, but this has not been the focus in the implementation.



Conclusion and Future Outlook

This case contributes to a systematic approach for assessing merits from external engagement. It provides tools that support a diversity of activities and impact of external engagement for numerous uses such as documenting merits, and support when assessing merits but also career development in Swedish universities.

Future work will involve local implementation activities and joint sector efforts combining higher education institutions to further the development of good practice based on the guidelines and tools developed. A continued national dialogue across universities and disciplines is essential to further develop and define the practice, policies and incentives for recognition and rewards of external engagement in a Swedish context. The national work will form a knowledge base that can contribute to related academic processes internationally.

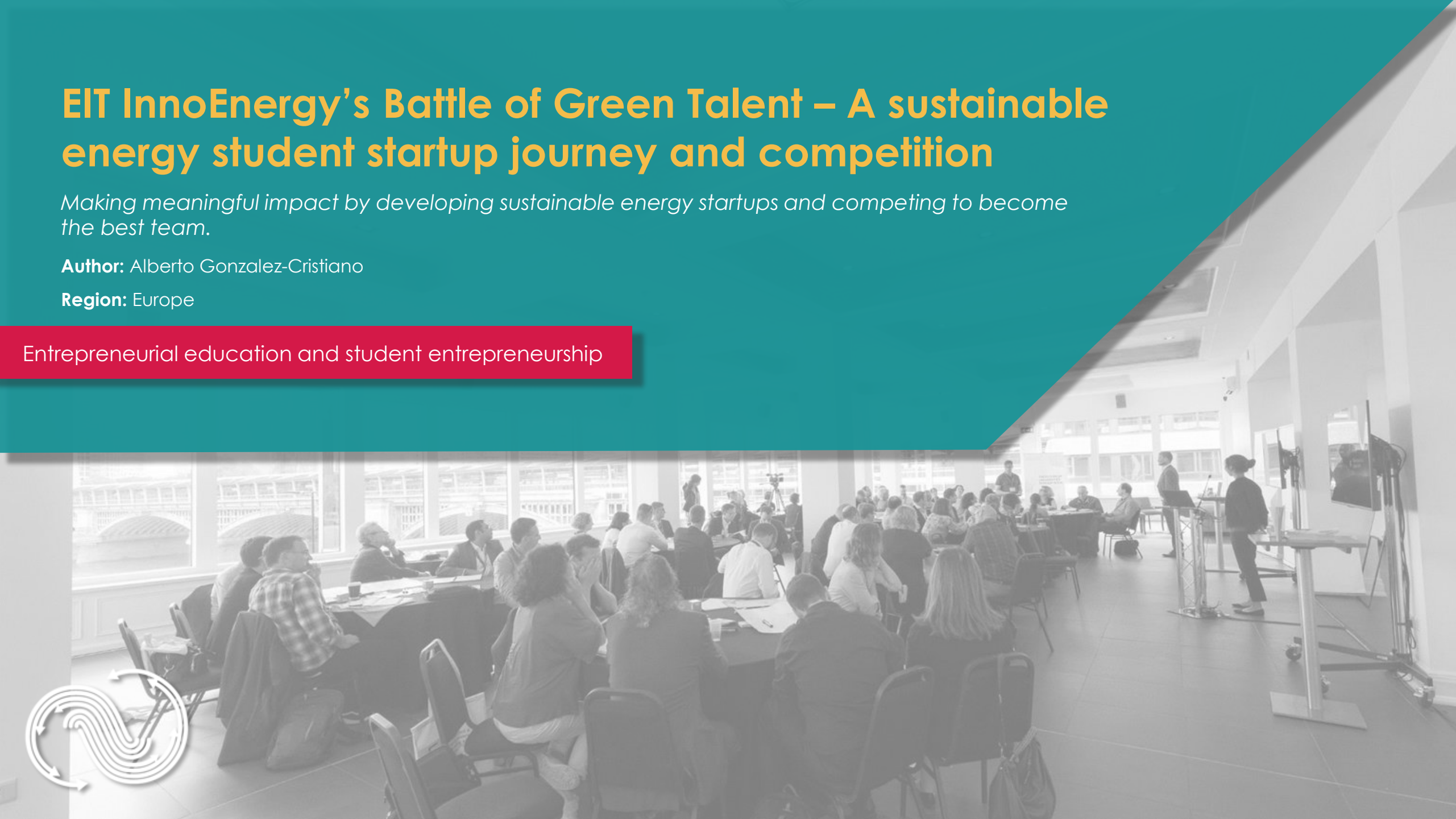
EIT InnoEnergy's Battle of Green Talent – A sustainable energy student startup journey and competition

Making meaningful impact by developing sustainable energy startups and competing to become the best team.

Author: Alberto Gonzalez-Cristiano

Region: Europe

Entrepreneurial education and student entrepreneurship



Background and Objectives

At EIT InnoEnergy, we embrace innovation and entrepreneurship as the catalysers of a sustainable energy future for Europe. To allow our students to contribute to this future, we created a fun and competitive dimension to this goal by introducing The Battle of Green Talent as part of our education activities of the master programmes.

EIT InnoEnergy's Master School is comprised of seven MSc. programmes in energy engineering, coupled with lifelong entrepreneurial skills, which are offered in collaboration with top universities across Europe. By introducing The Battle of Green Talent as a European-wide, overarching entrepreneurship competition, we aimed to give the students the opportunity to experience what it is to be part of a true entrepreneurial team and to compete to win great prizes.

Running from November to April, The Battle of Green Talent takes place in a virtual platform, resembling an entrepreneurial ecosystem, populated by Entrepreneurs, Talents (potential employees), Investors and Advisors. During the 6-month competition, EIT InnoEnergy students and alumni transform their bright ideas into promising businesses, try to raise funds in funding rounds and get the help they need from EIT InnoEnergy's ecosystem as they compete for being the best startup team.

Overall, The Battle of Green Talent objective is three-fold. Firstly, the competition aims at providing a hands-on entrepreneurial experience that allows EIT InnoEnergy's students to be part of a startup team and to be exposed to the real business world in which ideas are evaluated on their business value and not only on their technological novelty. Secondly, the competition has the aim to allow students from different programmes, and disciplines, to collaborate with one another and create multi-disciplinary teams and cross-sector innovations. Thirdly, as startup concepts are generated as the outcome of the competition, this deal flow can be steered towards EIT InnoEnergy's acceleration programmes for assessment.

Activities Undertaken

The competition is structured around three funding rounds mimicking the dynamics entrepreneurs go through as they develop their startups. As a first stage, "Entrepreneurs", played by EIT InnoEnergy's second-year master's students and alumni work on assembling a team and putting together a first version of a business plan which is then polished throughout the competition. First-year students, and students from other institutions and disciplines, also join the competition in this first stage as "Talents" and can apply to join a startup team or be asked to join by the Entrepreneurs. At the end of this first stage, Investors, played in this case by MBA and management students from business schools, evaluate the startup business cases and decide in which ones they would like to invest.

After round one, the first ranking of the startups based on their "share price", is put together and teams move to round two in which the business cases are polished and get ready for a new funding round. In this round, "Advisors", played by EIT InnoEnergy's internal, but also external, industry experts, join the platform and support the ventures with their advice and expertise. "Investors", as part of their role, also provide advice and tips to the startup teams.

After round three, which follows a similar process as round two, the final ranking is put together and the six best teams are selected as finalists. These six teams go through pitching training and get ready for the final pitching competition in which the final winner is selected.

Throughout the process, the competition maintains strong links with the Innovation and Entrepreneurship activities already existing within the different EIT InnoEnergy's master's programmes. Students are not given "content" as part of the competition but, instead, the learnings from their studies are put into practice.

Outcomes and Impact

The first pilot edition implemented in the academic year 2020-2021 finished with 22 sustainable energy startups created by EIT InnoEnergy Master's students coming from universities such as KTH Royal Institute of Technology, Universitat Politecnica de Catalunya or Aalto University. Over 250 students from EIT InnoEnergy Master School and partner business schools competed with the aim to win a spot in the final and the main prize of cash funding of €10,000 and a chance to enter the EIT InnoEnergy student incubator services with a starting value of €5,000.

The best six finalist teams competed in the final event to which 300 attendees attended. As a result, the winning start-up of the 2021 edition of the Battle of Green Talent was team ReLi. They aimed to manufacture sustainable and affordable energy storage solutions for solar PV homeowners by upcycling retired EV batteries. On the side of the Investors, we had participating students from schools such as ESADE Business School or London Business School and the overall winner was Felix Hübner, at that time MBA student at Grenoble École de Management.

As part of the 2021 edition winner's prize, team ReLi started receiving services from EIT InnoEnergy as preparation activities for a potential future application for EIT InnoEnergy's accelerator, "The Highway". The process of selecting the services that EIT InnoEnergy would offer to ReLi built on our acceleration experience and started with an evaluation of the case, analysis of the needs and the elaboration of a roadmap of services. In their case, due to their business idea, the support revolved around legislation, the technical viability of their prototype and an analysis of their main target market. In addition, and as the 2021 finalists were kept "on the radar", two other cases are being considered for a similar approach.

Lessons Learned

Although the first implementation of EIT InnoEnergy's Battle of the Green Talent can be considered a substantial success, some challenges were identified. The first challenge relates to engagement throughout the competition.

As The Battle of Green Talent can be considered a widespread activity, maintaining the engagement of the different actors becomes crucial. In order to ensure such engagement is maintained, integration with the master programmes' curricula is critical as it also ensure the students have time to be devoted to the activity. One of the greatest risks, in addition to students losing interest, rests on the overwhelming number of tasks and study activities the students go through during their studies. Coped with an ever-growing number of competitions, hackathons, etc., ensuring integration with the curricula and offering activities throughout the year, became critical.

This integration, as one could expect, is not without challenges. Traditional MSc. degrees have strict requirements and the possibility to add activities to the curricula is extremely limited and even more so in programmes such as EIT InnoEnergy's in which students already undertake entrepreneurship and innovation courses.

In addition to this immediate challenge, a deeper look at the competition also reveals some potential barriers for future editions. To maintain the realistic nature of The Battle of Green Talent, there is a need to expand the pool of Talents with students form different disciplines to mimic real entrepreneurial environment even further. While we see numerous benefits in doing so, there might be cases in which "Talents" do not get selected to join a start-up. Therefore, expectation management is crucial on this regard. In addition to "Talents", a growing pool of "Investors" from business school is key as they are the decision-makers, and their input is crucial if the "Entrepreneurs" are to create real startups.

Conclusion and Future Outlook

At the time of this submission, the second edition of The Battle of Green Talent is ongoing with similar numbers as the ones presented here. Almost 300 participants are contributing to building 21 startups. We have experienced a substantial increase in the number of Talents (56,63% relative change) but the breadth of disciplines has remained rather narrow.

For next editions, the focus will be on further increasing the number of "Talents", but also to ensure they come from more diverse disciplines, and to enhance integration with the different study programmes. Moreover, we aim to expand the pool of "Investors" from new institutions such as the newer participants in the 2021-2022 edition (Unternehmer TUM, University of Cambridge – Judge Business School or University of Oxford – Saïd Business School).

We believe if we make progress on these aspects, The Battle of Green Talent will become a referent in student entrepreneurship experiences.

Establishment of a structure for collaboration between two universities and SMEs using an intermediary organisation

The case describes the first outcomes and lessons learned so far in the KVIST- project.

Authors: Malin Löfving, Nina Albrecht, Jenny Bäckstrand

Region: Europe

Engagement models driving the regional innovation ecosystem

Background and Objectives

There is a need to raise the level of competence in the forestry and wood industry in Sweden for increased growth, innovation, and competitiveness. Most of the companies in this industry are SMEs and they are often located outside larger cities. They have little to no experience in collaboration with universities, but often have a close relationship with intermediary organisations. On the other side, the academic collaborations with the forest and wood industry focus mainly on larger companies.

To increase collaboration between SMEs and academia, the project KVIST was jointly initiated by Träcentrum (intermediary organisation), Linnaeus University and Jönköping University to increase the competence- and knowledge exchanges between SMEs in the forest and wood industry and the two universities in the region of Småland in Sweden. KVIST in Swedish means 'TWIG' in English, the Swedish abbreviation of "Competence Shift In the Forest and Wood industry". The objective of KVIST is to develop and establish a long-lasting structure for collaboration between academia and these SMEs using an intermediary organisation. The project started in 2020 and will continue until 2023.

We presented the initial ideas of the project KVIST at a poster session at UIIN 2020. This good practice case study is a continuation of the former presentation and describes the first results of the KVIST-project and how we work to establish a structure for collaboration between two universities and SMEs in forest and wood industry in Sweden using an intermediary organisation.

Activities Undertaken

The objective of the project will be achieved through two overall activities and underneath them three main activities. The overall activities are development of the structure, and matchmaking. The project is divided into three main activities: mentorship and internship, experience exchange and promoting research.

During 2020, we developed the working methods in the overall activity structure development. The first step was to get to know the partners in the project to build long term relations in the project team consisting of partners from Träcentrum, Jönköping University and Linnaeus University. The second step was to visualise the academic year to understand what the universities can offer companies and when. We call this figure the "academic year wheel". When we meet companies, the idea was to be able to present universities offer in the right time, i.e., not to offer master thesis in the spring when students searching for thesis projects in November. We are now testing and refining the working methods in according to the academic year wheel. We have also enlarged the project team with resources from the three project parts and today we are nine people working in the project.

The matchmaking consists of matching companies needs and requirements with universities offers and vice versa. Träcentrum is an intermediary organisation working towards competence development of the wood industry and has naturally taken the role as intermediate in the project. This means that people from Träcentrum visit SMEs and identify needs and requirements and when suitable, they promote the universities offers according to the academic year wheel. Thereafter, the project team match the companies needs and requirements with university offers. Matchmaking is also done from identifying student and researchers needs and interest and match them with companies interests and needs, one example is to participate at student career exhibitions.

Outcomes and Impact

We have two target groups and due to this the outcome and impact are twofold: the SMEs, and student and lectures at the universities.

We have had over 75 company contacts and so far, initiated 37 industrial cases suitable for student project, internship, or thesis project. The initiatives derive from a variety of topics based on the companies' challenges such as: market analysis, human resources, supply chain management, preventive maintenance, production development and sustainability issues. So far, 12 of these cases are appointed by students. One example is from a small manufacturer of staircases. The company wanted an analysis of current layout due to increased sales volumes and recommendations of a new layout. Here we initiated a thesis project aiming at recommending a new layout with a new production flow. Two students from a master program in production development were appointed to this thesis and presented the result to the company in June 2020. Another example is from a small furniture company that both manufacturing new furniture and renovate old furniture. A case to analyse and improve production flow for the old furniture was identified and described to students at Linnaeus university. Three students from master program in industrial economics are now working with this as part of a course.

So far, we have presented possibilities in the industry for 450 students and 60 program managers, senior lecturers, PhD students and researchers at the two universities. They derive from a wide range of education programs and research areas from building technology, computer science, business administration, supply chain management, to mechanical engineering and human resources.

Lessons Learned

Success factors:

- Using an intermediary organisation has been a success factor as they not only transfer knowledge, but translate university offers to company needs and vice versa. They also provide a big network of companies, in our case about 400 companies in the region.
- SMEs are positive to collaborate with the universities, especially with students. If the companies have not collaborated with universities before, we begin to initiate a student project or thesis at the company. This has so far been successful, and companies ask for more student projects from students at different programs than the traditional program building technology.
- A closer relationship between external relation departments at the two universities.

Challenges

- The major challenge so far has been to match students with the existing industrial cases. This is because most of the students have no experience of forest and wood industry. Recently, we have participated at student career days with a successful result; we talked to around 90 students at three different student career days in November 2021 at both universities and around 30 students showed interest in the industry.
- Another challenge related to this is that SMEs in forest and wood industry is often located outside the city of the university and students have been somewhat hesitating to make a student project in smaller companies outside a city.
- Due to the challenges above, the matchmaking takes more time than planned. We also visit the companies with the students until both the company and the student feel comfortable with each other, especially when a company has not worked with students before.
- We have had contact with many companies but have not been able to visit them to the extent that we wanted and had planned for due to the pandemic.

Conclusion and Future Outlook

This good practice case describes the first results of the KVIST project and how we work to establish a structure for collaboration between two universities and SMEs in forest and wood industry using an intermediary organisation. The overall activities focus on structure development and matchmaking.

We will continue to test and refine the activities and continue to match industrial cases with students during 2022. In 2022, there will be a bigger focus on the activities promoting research and experience exchange. We will also work towards to make this collaboration sustainable, so it continues after the project ends.

First results of a government funded proof of concept initiative at Hungarian universities

A novel approach to a grant based PoC funding at Hungarian universities revitalizes commercialisation activities and university-industry relations at several universities.

Authors: Laszlo Koranyi, Katalin Sebok

Region: Europe

Supporting mechanisms for entrepreneurship and research valorisation

Background and Objectives

While Hungarian universities are regionally among the top performers based on different science metrics, their licensing and patenting activity is lagging behind. There are some great examples of university-industry cooperation, like Audi and Győr (Széchenyi) University but these are usually based on and driven by a single, multinational partner, and not on the commercialisation activities of the university. This means that SME cooperation, crucial for the Hungarian economy, is not that much in the focus. The creation of university-based startups and spinoffs is another important area of strengthening innovation in Hungary.

Proof of Concept funding is a well proven method in university technology transfer. This was emphasized by the HEInnovate project of OECD both in Hungary and Romania:

"External financing can be essential for the success of a new venture, e.g. providing investment for feasibility and market studies, product and prototype development such as Proof of Concept funding" (Supporting Entrepreneurship and Innovation in Higher Education in Hungary, OECD/EUROPEAN UNION, 2017).

Another problem in the university commercialisation process is that there is a large gap between the maturity of the university-based projects and the expectations of even the early-stage investors. PoC funds are a great tool in bridging this gap.

The national RDI strategy of the Hungarian government also emphasises that universities should be encouraged to focus more on innovation and industrial cooperation.

Activities Undertaken

In 2019 a call was issued by the National Research Development and Innovation (NRDI) Office with the title: University Innovation Ecosystem Development. The main objective of the call was to enable universities "to commercialise research, to improve technology transfer, intensify and widen cooperation with business partners in the fields of technology innovation and design". The call defined 11 eligible activities out which at least 5 had to be selected by the applicants. Setting up the PoC activity was one of them. For this activity, the largest single amount of funding could be used, up to 40% of the total funding (maximum €180k) received by the university. Other activities included entrepreneurial and IP trainings, development of a service portfolio, establishing new cooperation with industry, creating necessary databases, setting up hackathons, fablabs, etc.

Although the operation of the individual funds is the task of the universities there were a number of conditions defined by the funding agency:

- University level PoC grants to be assigned through an open call where academic staff, PhD students and graduate students can apply.
- The university has to set up a selection board, where the majority of the members must be from the industry or from the technology investor community.
- The main goal of the projects is technological and business validation.
- The maximum amount of funding/project is about €20k, the maximum duration is 12 months.
- A mentor with business experience has to be involved in the individual projects.

Before and during the course of the project a number of progress meetings and seminars were organised to clarify expectations of NRDI and discuss results and problems of the applicant universities.

Covid-19 caused some delay in closing the projects, nevertheless, based on the success of the call, a second round was started in October 2021.

Outcomes and Impact

There were 21 successful proposals to the University Innovation Ecosystem call out of which 15 included the establishment of the PoC fund/activity in their proposals. Except for one, those who have not chosen the PoC activity were universities in the field of art or without any significant research activity. The 15 PoC funds have received 225 applications and 119 projects were approved, with an average funding of about €10k. The calls at the universities followed different concepts and the funding tickets also show a great variance. In certain cases, this can be explained by their dominant research fields (eg. software or life sciences) in other cases the strategies of TTOs were different.

The university TTOs were enthusiastic about the benefits of the process itself. Except for 2 universities there was no such previous activity or funding, and the new initiative was very well received. On average we can say that at least twice the number of the actual applicants were contemplating the submission of their project proposal and many of those were not even known to the TTOs.

Looking at the other group of the stakeholders: setting up the business part of the selection board gave an opportunity to the universities to strengthen existing partnerships and forming new ones. The external experts who have been approached were very positive about the initiative and their participation in the process seems to be useful even for the TTOs themselves.

Approximately half of the projects were delayed due to the negative effects of the pandemic. The first results are positive: about 80% of the projects will be continued and a quarter of those will use VC or other business funding; 14 spinoffs and 28 license sales are already in the pipeline.

The top 3 sectors of the projects: Medtech, Cleantech, Agtech

Lessons Learned

The greatest challenge was that the universities had to assume the role of a "mini granting agency" that has to take into account the conditions of the call and the specifics of their institution and to formulate the necessary bylaws.

One other important lesson is the acceptance of failure. Some of the university representatives didn't feel comfortable with admitting the failure of a project, and they had to be convinced that this is an absolutely normal, and even useful result. Some others, more familiar with this type of approach, were wary about the fact that there were too many successful closings.

These challenges were handled with an ongoing support mechanism of the granting agency, including quarterly joint meetings with the universities where all the problems and good practices were discussed and solved.

The involvement of the business partners in the whole process, from the selection through mentoring and hopefully in several cases to some kind of business cooperation, proved to be very useful for forming a new type of partnership between university and business actors.

From the project-owners point of view these small PoC projects helped them significantly to understand the real commercialisation potential of their research/ideas and to provide them with a clear roadmap for the continuation or to help them in making a painful decision to stop with their efforts in a specific project.

A detailed analysis is being made about the results of the first round of PoC projects, quantifying the main factors of success and failure.

Conclusion and Future Outlook

A better than expected university feedback is clearly shown by the fact that in the second round of the call (October 2021), where most of the participating universities suggested to increase the PoC allocation from 40% to 60%. (Eventually it was raised to 50%).

The number of projects has risen as well: in the first round they committed to 90, eventually 119 were financed (with own funding included), and in the second round 130 projects were committed.

Involving industrial partners, investors, both in the selection process and mentoring proved to be an excellent tool translating research results into innovation, defining paths for commercialisation. NRDI plans to continue this program, our goal is that universities will see the benefits of allocating an increasing amount of their own financing to the PoC funds. We believe that at a later stage the revenues from commercialisation will make the funds self-sustaining.

Fostering technological innovations in the social and health care sector: A case study from Finland

Lessons learned from building a university-driven ecosystem to boost well-being technology innovations.

Authors: Kati Peltonen, Pirjo Tuusjärvi

Region: Europe

The role of the engaged university in entrepreneurial ecosystems

Background and Objectives

Universities have a crucial role in the development and growth of local and regional innovation ecosystems, which aim at stimulating innovation activities in their regions. This also applies to LAB University of Applied Sciences (LAB), which is a middle-sized university located in southern Finland.

This paper focuses on the opportunities and challenges that LAB University has faced when building up a regional ecosystem and a well-being technology lab to boost technology-related innovations and business development in the healthcare and well-being sectors. Initiatives to strengthen university-business collaboration and to promote innovation in the field of well-being and health have been underway for several years. In Finland, this work is currently even more relevant, as the operating environment of the healthcare providers is changing drastically owing to the national social welfare and health care reform. As a result of the reform, 17 broad welfare areas will be responsible for organising social and health care and rescue services for the region, while the municipalities within a welfare area have the main responsibility for preventive health care and well-being. This requires more intensive collaboration between public and private health care providers, municipalities and NGOs, who also provide well-being services and support for preventive health care.

The aging population, growing demand for health care services, increase of health care expenditures, and the shortage of healthcare workers have raised questions about how health services will be organised in the future, and challenged the health care providers and municipalities to look for more efficient, cost-effective, and sustainable ways to provide the services. A wider adoption of technology and digital services has been seen as the solution. Collaboration with a university-based technology lab is needed when testing new solutions for example to provide primary health care services or to support the elderly living in their own homes.

Activities Undertaken

LAB has played a key role in promoting innovation in technology-related well-being in Päijät-Häme since 2016. Until then, the ecosystem-like activities of the Päijät-Häme welfare sector were underdeveloped, as the development was carried out separately by several actors.

Thus, the overall picture was fragmented and the synergy advantage between different development activities remained insufficient (Rinkinen, 2017). To meet these challenges, LAB launched development activities aimed at bringing different stakeholders together, building an innovation ecosystem and creating a model for the operation of the development environment. The aim is to promote the well-being and health of the region's residents, reduce health inequalities, develop cost-effective and customer-oriented well-being services, and promote well-being-related business, competitiveness, and internationalisation.

The process consisted of three partially overlapping stages:

1. Ecosystem community formation

- Analysis of the current state in the community and analysis of needs.
- Joint meetings with various stakeholders.
- Creating a common understanding of the vision of the regional ecosystem.

2. Aggregation of companies

- Joint construction of a regional health and well-being ecosystem plan.
- Road map for the future.

3) Building-up a collaborative innovation environment LAB WellTech

- Service concepting, process planning.
- Testbed activities, pilot cases.

LAB, together with technology and healthcare companies in the region, conducted several workshops to strengthen cooperation between different actors and to share up-to-date information and knowledge on the development of innovative technological services and products. The companies also participated in the organisation of innovation hackathons, where LAB students in interdisciplinary groups sought solutions to the challenges presented.

The construction of ecosystem-like activities also included cooperation and workshops with providers of public welfare and health services. The aim was to identify the opportunities for ecosystem cooperation, the needs of the industry in the development of services utilising technology, and the challenges of technology adoption.

Outcomes and Impact

Strengthened well-being technology R&D between LAB and SMEs, increased collaboration between university and public and private health providers, are key outcomes of the ecosystem development process.

Direct and long-term impact arises from value networks, cooperation, joint development, and dialogue between the actors. Ecosystem actors benefit from the sharing and exploitation of new knowledge, which will build a culture of experimentation and lead to increased exploitation of cross-industry innovation potential by accelerating the co-creation of innovative welfare services.

As a result of regional interconnected network collaboration, LAB WellTech was created for innovation, testing and development of well-being technologies. This has strengthened LAB's external engagement potential with SMEs and intensified cooperation with other key stakeholders as well. LAB WellTech has also become a member of the national testbed network, and thus also a partner in the national innovation value chain.

LAB WellTech's main deliveries are:

- Co-development of technical welfare products and services.
- Testing of existing technological solutions and gathering user experience.
- Piloting new technological innovations in authentic environments.
- Assessment of the suitability of the product or service for the health care sector.
- Innovation workshops for companies and university students.

LAB WellTech's operations have a direct impact on technology and healthcare companies. Technology companies can test their innovations and receive suitability and usability assessments and development suggestions. For healthcare companies, LAB WellTech offers the opportunity to co-develop technological solutions or test existing welfare technologies.

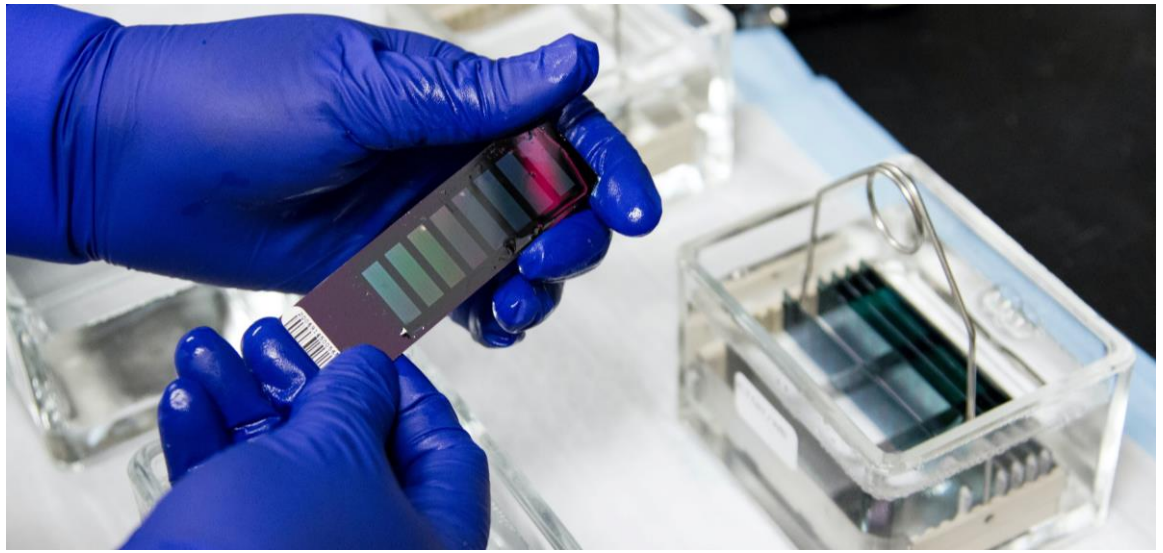
Solutions developed in collaboration with end users have a direct impact on business in both the short and long term. Product development also indirectly affects end users and is reflected in the accessibility of services and as easy-to-use products. In this sense, the beneficiaries of the operations of the LAB WellTech development environment are not only companies, but also end users.

Lessons Learned

Building up an innovation ecosystem involved various challenges at different stages of the process. In the community formation phase, the main challenges related to the creation of an atmosphere of trust that allowed for open and constructive communication about the objectives, needs and expectations of the innovation ecosystem. As each organisation had its own goals and a culture of co-innovation was not created, it was crucial to build a common foundation for intensified collaboration. Several meetings and workshops were arranged to discuss the roles of different stakeholders, and to outline the goals and action plan for the future of the ecosystem.

The second phase focused on participating and encouraging companies to recognise possibilities which lie in intensified b2b and university-business collaboration, especially related to digitalisation and the uptake of technological innovations. Furthermore, strengthening relationships between private and public health care providers was also crucial, as they struggled with the same problems, but have used to work separately. Workshops and other initiatives had to be organised in a way which enabled flexible participation of different actors, as time constraints are always present, but simultaneously it was crucial to support open dialogue and trust building, which takes time. Joint gatherings as well as one-on-one meetings were needed to build a common understanding of the vision and goals of the ecosystem and roles of each actor in it.

In the third phase university-business-industry collaboration was put and tested in practice. At the heart of this phase was the construction of the LAB WellTech innovation infrastructure and the launch of joint innovation activities with companies and healthcare organisations. It consisted of practical level challenges, like service concepting, process planning, brand strategy, and carrying out testbed activities. Tackling these challenges required strong coordination, ability to withstand uncertainty and an attitude of learning by doing.



Conclusion and Future Outlook

Universities are encouraged to boost innovation activities in their regions to respond to societal demands (Liu et al 2021). Accordingly, LAB has taken an active role in building a regional ecosystem to increase well-being innovations and R&D in the region.

As a result, the well-being technology innovation environment LAB WellTech has been launched, and co-innovation between ecosystem actors has intensified. Collaboration with technology and health companies and public welfare actors have accelerated new technological solutions and customer-driven usability and suitability testing of the technology.

Multifunctional network collaboration will be the key to provide efficient technology-assisted welfare services in the future to meet the growing challenges of the social and health sector. Thus, the next step for LAB WellTech is to strengthen its position as a development partner for technology companies and welfare service providers on regional, national and international level to support utilisation and deployment of technology.

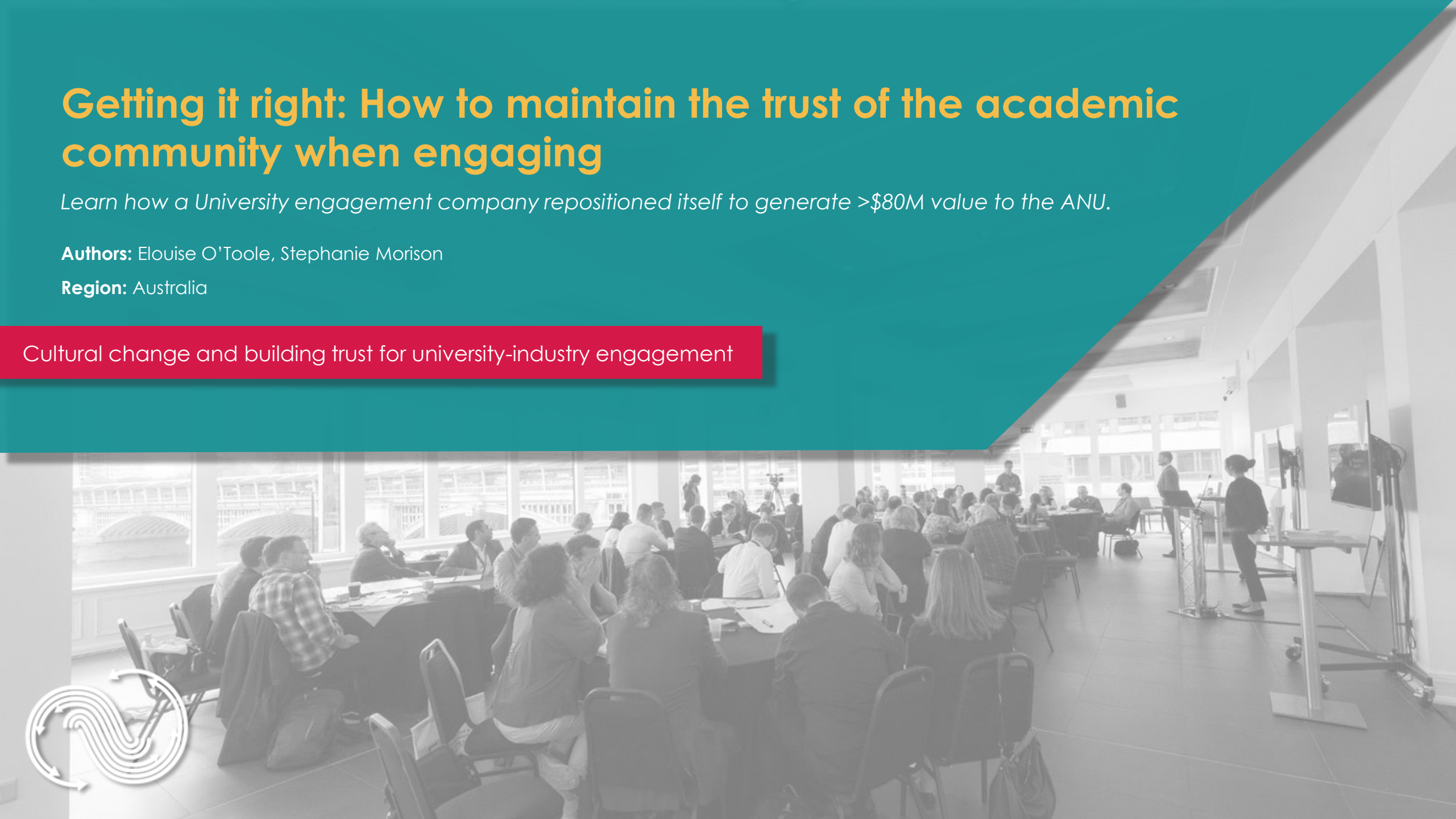
Getting it right: How to maintain the trust of the academic community when engaging

Learn how a University engagement company repositioned itself to generate >$80M value to the ANU.

Authors: Elouise O'Toole, Stephanie Morison

Region: Australia

Cultural change and building trust for university-industry engagement



Background and Objectives

ANU Enterprise, the Australian National University's engagement company, provides high-quality commercial support to ANU academics who are undertaking external consultancies, contract research and executive education projects with a range of clients, including small and medium-sized enterprises. Since our founding 40 years ago, the Company took on a range of roles and responsibilities for ANU. The company structure allows responsive and flexible engagement with government entities and companies of all sizes. The company also owns businesses that assist the ANU with its external engagement efforts.

In 2017, ANU Enterprise undertook a strategic repositioning to rebuild trust within the academic community, which had been lost through a disconnect in alignment from our core purpose of providing value to the University. This presentation will examine the journey over the past five years, including initiatives such as launching a purpose-built model that delivers the University a significant value proposition measured through detailed reporting and feedback mechanisms and designing a clear service offering that ensures our business development activities are academic-led and fit the strategic goals of the University.

@Australian National University

Activities Undertaken

We have undertaken a multifaceted repositioning of ANU Enterprise to rebuild trust within the University. This presentation outlines the journey, the pitfalls and successes in developing a new business model, which includes the design and implementation of an academic-led business development service offering, a project management service offering to support research, consulting and executive education/professional short course projects, and ensuring delivery meets the commercial expectations of our Government and Industry clients, The development of a new Engagement & Marketing function including the implementation of engagement tools and feedback mechanisms such as a Net Promoter Score metric which has captured over 135 examples of academic sentiment in the past year.

Key to success included activities such as a structural and cultural change within ANU Enterprise, closer alignment with ANU strategic objectives, making the academic community a central focus of our engagement activities, a clear value proposition, value reporting mechanisms to the University Council and Executive, building a positive track record through customised support to academics both individually and collectively.

Outcomes and Impact

There are a range of outcomes in rebuilding trust with the University. One of the most exciting of these has been the increase in revenue from Industry and Government for research, consulting, and executive education projects. An increase in traction of these new service offerings with academics reaching out to us directly to support their work engaging in industry has created academic champions across the university and an array of projects that would not have come through traditional business development activities. Since the introduction of a new service offering ANU Enterprise has assisted academics with the development of 139 proposals valued at $188M submitted to industry (including SMEs) and Government. ANU Enterprise has delivered a return on investment to the University of 15x for every $1 spent on BD team salaries. Our Net Promoter Score for this year is 68/100, which is 21 points higher than industry benchmarks in Australia, ensuring our service delivery remains in step with commercial best practices and aligned to the new ANU 2025 strategy.

Lessons Learned

University engagement companies can be more commercially agile than Universities, allowing them to be a flexible vehicle for engaging with a range of organisations, from Government to small enterprises. However, ANU Enterprise's experience over the last five years has demonstrated that support from the academic community is paramount in enabling engagement, which takes time to build and can be easily eroded. Without it, the model does not work. We also learnt that alongside trust, critical to success is a unique service offering, a strong value proposition, a healthy company culture, and a robust sustainability model. These important elements were key in successfully re-aligning with the University to deliver >$80M in revenue for research, consulting, and executive education projects with Industry (including SMEs) and Government.

Conclusion and Future Outlook

Our experience through this repositioning exercise, has demonstrated that by keeping the academic community as the key stakeholder in your business development activity, you will not only build trust in engaging with Industry, but also create academic champions for external engagement, which in turn can increase the volume and impact of the University's engagement with enterprises of all sizes. We are excited to continue supporting our academic colleagues by providing high-quality commercial, business development contracting and project management services. Next steps will include service diversification and improvement as well as demand-driven scaling up of our operations.

Helping the brightest minds make their ideas come alive: The power of partnership

Transforming great ideas into marketable realities represent the key outcomes of vibrant entrepreneurial ecosystems.

Authors: David Brukardt, Aaron Hagar

Region: North America

Innovative and entrepreneurial education

Background and Objectives

This case study provides a review of the unique and enduring partnership between the University of Wisconsin System and the Wisconsin Economic Development Corporation (WEDC) and highlights program development, successes delivered, and lessons learned. This effort is significant due to the size of the initiative's coverage and scope: 13 universities serving 165,000 students across an entire U.S. state, the collaboration of Triple Helix partners, and the range of activities and collaborations involved.

The University of Wisconsin (UW) has a century-old tradition of connecting with stakeholders through a concept called the "Wisconsin Idea." This concept was first articulated by President Charles Van Hise, who believed the boundaries of the university are the boundaries of the state and that every citizen should benefit tangibly from the research, education, and inspiration offered through the university.

Building on this tradition, the UW System Office of Corporate Relations & Economic Engagement was created in partnership with state government. This office connects business and industry with the faculty researchers and talented student innovators. Together, the UW System and WEDC have forged a highly energised collaboration that generates and sustains vibrant connections among academic researchers, government policymakers, and private sector partners.

Joint programming provides "lift" for promising ideas no matter the discipline of origin. Programs with a statewide reach are managed from UW System in conjunction with experts housed in the largely field-based Institute for Business and Entrepreneurship (IBE) and the Wisconsin Technology Foundation (WiSys), a spin-off from the Wisconsin Alumni Research Foundation (WARF). Campus-specific initiatives are managed regionally. Examples include the Discovery-to-Product (D2P) program at UW-Madison and the Capital Catalyst fund managed by UW-Milwaukee Research Foundation. Through these and a wide range of additional programs, WEDC and the UW System offer a broad range of jointly funded resources to strengthen Wisconsin's innovation ecosystem.

Activities Undertaken

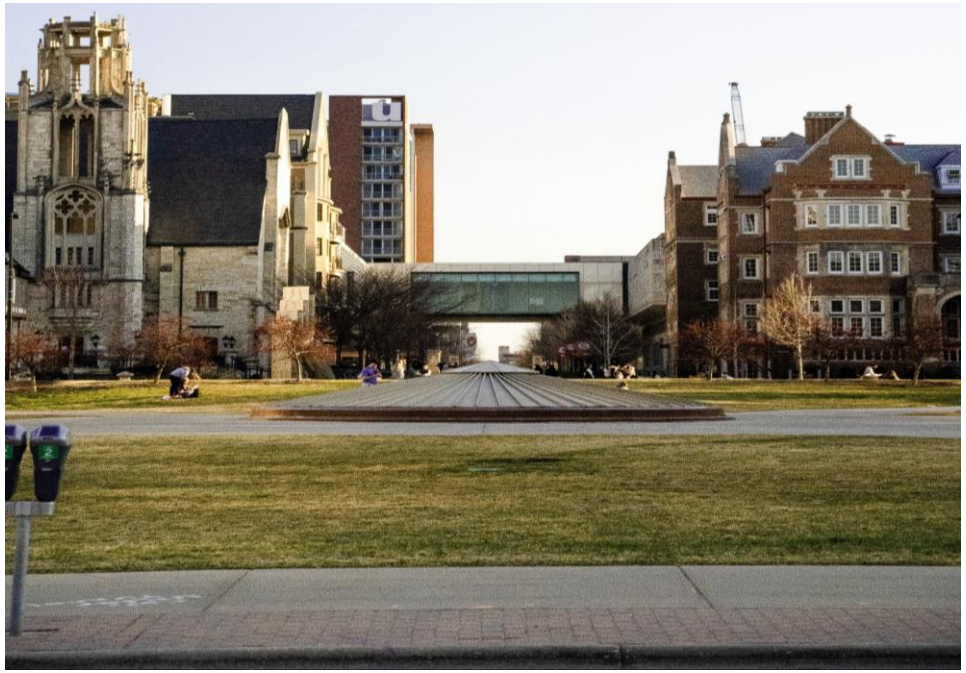
The UW System-WEDC partnership spurs entrepreneurial activity across an extensive range of pathways, including direct capital infusions, incentives, tax credits, lean start-up mentoring, and a range of additional resources. These programs are designed to nurture entrepreneurial energies and to assist and advance businesses of any size as they move toward the forefront of innovation.

WEDC's accelerator and seed fund programs, managed jointly with UW System, represent high-impact components of Wisconsin's innovation ecosystem and help faculty and student entrepreneurs transform their concepts into viable business enterprises. This effort is largely driven by volunteer support overseen by a small group of knowledgeable staff experts. WEDC's Aaron Hagar has observed that high-profile, private-sector business leaders and entrepreneurs who serve on the Ideadvance lean-start-up selection committee, for example, volunteer significant time and effort each year to help young companies successfully launch and grow their start-ups.

Other programs provide strategic business plan support, capital planning, and data-driven guidance for identifying and securing additional federal and private grant funds. Interest in the lean start-up program, for example, continues to be strong on-campus and well beyond. This program now is available to UW System alumni, further broadening its reach and attractiveness to Millennial and Gen-Z entrepreneurs.

One of the fastest growing programs is a food accelerator. Now entering its sixth year, this program has assisted 50 food and beverage related companies by providing $864,250 in grant funding, which, in turn, has attracted $18.4 million in additional capital and generated revenues of $36.8 million.

Overall, since 2013, WEDC-UW joint programs have assisted 900 companies with grant infusions totaling (U.S.) $187 million. In turn, these firms have attracted an additional $203 million in follow-on capital investments and generated $64 million in revenues.



Outcomes and Impact

Notable results of WEDC's unique, public-private partnership with the university include the following:

- One economic development support program provides seed funding that allows faculty, staff, and students to protect intellectual property as part of their discoveries and to potentially obtain licensing revenue. Applications for intellectual property protection across the 11 primarily undergraduate campuses have increased dramatically, from one or two per month five years ago to more than one per week today, despite the impact of the pandemic.
- In 2021, WEDC managed deployment of $50 million in Wisconsin Innovation Grants that have energised the development of workforce-preparedness programs across the state. One of the largest grants of $9.7 million was awarded by Gov. Tony Evers and WEDC Secretary & CEO Missy Hughes to the UW-Eau Claire campus for its 16-county partnership with Mayo Clinic to restructure health care curriculum and remote delivery in rural regions.
- Overall, the state of Wisconsin has increased its level of business attractiveness. The magazine Chief Executive, through its annual analysis of the "Best States for Business," placed Wisconsin 15th in in 2021, up from 41st in 2010.

The initiatives highlighted in this case study represent key strategic components driving the effectiveness of UW-WEDC program efforts, which continue to grow, expanding engagement, external collaborations and match funding that drive increased positive outcomes each year.

Additionally, the economic development activities within the University of Wisconsin have been integrated at the highest levels (the governing board of the university and cabinet secretary level in state government). This better ensures the prospects and alignment for continued growth and funding of strategic economic development initiatives to support undergraduate research, entrepreneurship, and innovative business collaborations, thereby enriching student success and fostering 21st century workforce preparedness and leadership development.

Lessons Learned

Fostering a sustainable culture of change related to the third element of the university's three-part mission of teaching, research, and community service requires engagement and buy-in from all levels of the academic organisation. Although university systems do not typically operate at the speed of business, a compelling case can be made for building nimble and flexible partnerships across the academic/business cultural divide that benefit students and can integrate research and learning with career success.

Many of the programs, including the Lean-Startup initiative, draw from existing operations infrastructure and business experts, thus saving money on infrastructure and personnel, and resulting in more pass-through dollars to teams. The Institute of Business & Entrepreneurship mentioned earlier is campus-independent and can focus across the system.

Discussions at the UW System board level (with business, government, and educational leaders and partners as represented in this case study) have highlighted the challenges encountered and finesse required to successfully create a climate of acceptance and partnership and have helped to foster bridge-building efforts.

Faculty receiving recognition for work done in this context provide inspiration to others and have helped to strengthen connectivity among students, business, and government partners in more meaningful and authentic ways.

Each year, WEDC also collaborates with UW System to evaluate and select three Regent Scholars who are recognised for their stellar track record for promoting innovation in the classroom, in research, through internships and with industry collaborators. This board-of-directors level recognition for university innovation continues to foster a culture of third-mission outreach across the state's public higher education system.

Conclusion and Future Outlook

As a guide for considering adaptation of UW System initiatives, several factors enhance the prospects for success:

- First, leadership support is critical at the highest levels of the university structure for economic development initiatives to be embraced and to gain traction.
- Second, it is essential to have buy-in for key strategic initiatives from a broad range of partners both inside and external to the university.
- Finally, it is important to execute on a manageable number of tactics that can generate early successes and build momentum and to recognise and reward faculty and business partners who invest time, talent, and resources.

UW-WEDC programming helps the university support its third mission of outreach as reflected in the "Wisconsin Idea." Public-private partnerships that have been formed support a vibrant entrepreneurial environment and help create a solid foundation for the future. Collectively, these efforts further connect higher education with outside stakeholders.

Hospitality 2.0: Co-creating value with playroom @ EAHM

This case focuses on showcasing academia-industry collaboration in co-creating an immersive innovation experience.

Authors: Sanjay Nadkarni, René Massatti

Region: Asia

Developing and nurturing strategic partnerships

Background and Objectives

Hospitality innovation may sound like an oxymoron to some as this industry is steeped in legacy practices that are increasingly becoming obsolete and unsustainable in the context of contemporary developments. To break out of this stagnant mold of 'more of the same', it is of paramount importance to equip the future generations of industry professionals with innovation tools tailored specifically for the hospitality and the services sector. For this purpose, Playroom (a Vienna based innovation enabler, now part of the Edding Group), and the Emirates Academy of Hospitality Management (a hospitality focused higher education institution which is part of the Dubai based luxury hotel brand Jumeirah Group) have developed a collaborative Industry-University partnership with the following objectives:

- **Learning:** To learn by doing and see what it needs to create a state-of-the art innovative learning and co-creation environment including analog and digital aspects.
- **Visibility:** To create a light house project for their respective target groups / stakeholders to demonstrate the feasibility of innovating processes and practices in an otherwise legacy driven industry like hospitality.

Activities Undertaken

In alignment with the hitherto mentioned objectives, a dedicated Innovation Hub has been set up at the Emirates Academy of Hospitality Management (EAHM) campus to serve as a creative room and a design thinking lab involving installations of agile frameworks, methods and systems. A set of specialised screens and camera are part of the set-up to enable hybrid co-creation and education sessions supporting three processes:

- Futures Thinking [to scope out the opportunity space].
- Design Thinking [to identify the problem-solution fit].
- Agile Process Development [to iterate towards a solution-market fit].

Following are a selection of early harvest outcomes demonstrating the breadth and depth of this collaboration:

- EAHM collaborated with the Hotel Asset managers' Association's Middle East chapter (HAMA-ME), a professional industry network on the 'Hotel Room of the Future' project wherein Futures Thinking and Design Thinking processes were deployed to conceptualise futuristic guest room technologies. The other spin-off, was this project which allowed the BBA and MBA students to network with senior industry professionals and expose the latter to the aspirations and expectations of the Gen-Z within a research environment.
- EAHM's Food & Beverage faculty team facilitated a demo and workshop for a group of self-help female restaurant workers in Sudan in a purely online mode. The Futures Thinking framework was used to identify opportunities in menu engineering and emerging F&B trends locally.
- A high-level innovation and strategy masterclass for senior executives of global multinationals' Middle East and North Africa regional offices was hosted at the Innovation Hub as a joint endeavor between EAHM, Edding and Hooks (a Dubai based strategy consultancy), wherein the participants had an opportunity to sprint through the design thinking and corporate co-innovation frameworks from the perspective of their respective businesses.

Outcomes and Impact

The Playroom installation was commissioned on schedule in November 2021 by the Edding team which traveled from Vienna and Amsterdam to Dubai, in spite of the pandemic restrictions. The training sessions with the faculty enabled them to quickly pivot to adopting innovation frameworks in their teaching, research and advisory practices. The Edding team also facilitated workshops for the industry stakeholders, collaboratively with EAHM faculty. The immediate impact is clearly evident in the form of:

- Creation of an open innovation space on campus; in reality, this is borderless innovation, transcending geographical, sectoral, institutional and more importantly cognitive boundaries- we have therefore termed this as 'Innovation without Borders', or 'Innovation sans Frontiers'.
- Blending best practices and cross-pollinating ideas across sector verticals that inform policy and decision for corporates and startups as evidenced by the workshop outcomes.
- Networking opportunities for EAHM students with senior industry stakeholders leading to career opportunities upon graduation.
- Development of a roadmap for creating hospitality specific innovation frameworks and processes.

The above points demonstrate the early harvest success metrics of this initiative which are diverse and impact-driven.

Lessons Learned

The key challenge continues to be the buy-in by all stakeholders, given that both hospitality and education sectors are inertia bound and traditionally resistant to change. Though there has been no overt pushback questioning the necessity for innovation, the intent to walk the talk has been diverse. Therefore, while the hitherto described early harvest success stories are encouraging, the long-term viability and impact potential of this initiative is contingent upon widespread adoption and iterative improvisations of the frameworks which can yield tangible results.

Conclusion and Future Outlook

The hitherto illustrated examples of the early harvest projects within three months of the launch of the Innovation Hub is a testimony to the potential and future outlook. The future steps include co-creating innovation frameworks specific to the hospitality and services industry that will enable targeted innovation interventions in processes related to operations and strategy. These steps include intensive engagement with a wide spectrum of industry stakeholders. In conclusion, the value addition and co-creation potential of this academia-industry partnership has been successfully demonstrated through this lighthouse project which is now ready to be scaled up for wider impact in hospitality and services sector.

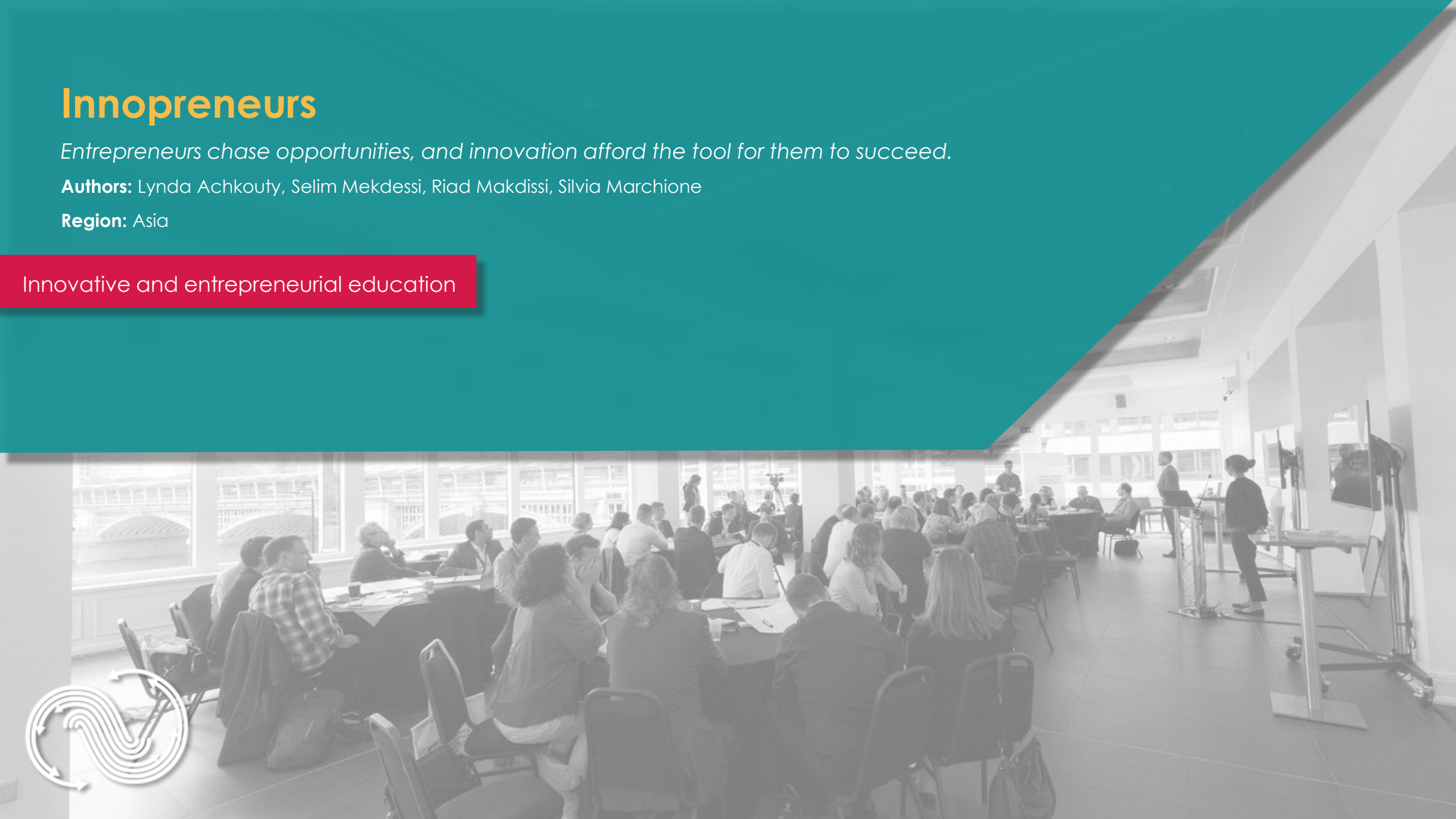
Innopreneurs

Entrepreneurs chase opportunities, and innovation afford the tool for them to succeed.

Authors: Lynda Achkouty, Selim Mekdessi, Riad Makdissi, Silvia Marchione

Region: Asia

Innovative and entrepreneurial education



Background and Objectives

UNIMED, the Mediterranean Universities Union, counts 140 Universities coming from 23 countries of both shores of the Mediterranean. It acts in different scientific fields with the aim to develop research and education in the Euro-Mediterranean area in order to contribute to scientific, cultural, social and economic cooperation.

The objective is to prepare the ground for the youth in order to innovate and an image that better represents UNIMED is that of a University Without Walls. UNIMED has promoted the collaboration between universities of the Mediterranean, becoming a point of reference of the international university cooperation.

UNIMED carries out the following activities in favour of the associated Universities:

- Promoting the international dimension of universities.
- Planning and fund-raising activities.
- Promoting mobility in the Euro-Mediterranean region, for students, researchers and academic staff.
- Technical assistance for the enhancement of quality assurance in university education.
- Organising meetings, discussions, seminars and round tables both at a national and international level.
- Training academic and administrative staff of Universities, particularly for the staff of International Relations Offices.
- Creating thematic SubNetworks to foster the scientific cooperation within specific fields.

We would like to shed light on the last activity which is the SubNetworks. The SubNetworks intend to create a database of research centers, university departments, ongoing projects and research line, including existing partnerships in the selected fields.

In particular, UNIMED has launched in 2018 the UNIMED SubNetwork on Employability, launched as part of the RESUME project (www.resumeproject.eu), a European Union project funded under the Erasmus+ Capacity Building programme.

Activities Undertaken

The Employability SubNetwork is managed by the Lebanese University, the only public university in Lebanon counting more than 82,000 students from all over the country with more than 19 branches and faculties. All the activities are implemented by CentreMINE: the centre for Careers, Innovation & Entrepreneurship. CentreMINE's vision is to be a learning hub recognised by the Lebanese University students as an enhancement of their lives. Its mission is to empower the Lebanese University students by offering them equitable and free access to skills improvement and employment opportunities for career development, and to bridge the gap between the education system and the business sector. This subnetwork is concerned by seven main topics, among them entrepreneurship and innovation.

Among the activities that strengthen entrepreneurship and innovation among the students we can list:

- the Start cup competition;
- the career centre needs analysis and capacity building activity;
- the Mediterranean Orientation Day;
- the training on business plan to support students in defining their own business idea; and
- student entrepreneur status.

The **Start Cup Competition** is a competition of entrepreneurial ideas developed by university students enrolled in one of the universities around the Mediterranean. This competition aims to encourage participating teams from universities on both shores of the Mediterranean to present innovative ideas in the field of entrepreneurship. The next Start Up Competition 2022 will take place in June 2022 in Jordan whereby the students will be tackling the sustainable development goals.

Furthermore, the overall objective of the **Student Entrepreneur Status** project is to strengthen the entrepreneurial culture and innovation in higher education to promote the emergence of companies with potential for growth and employment. It draws its inspiration from the French PEPITE program for creating "student poles for innovation, transfer and entrepreneurship".

Outcomes and Impact

The above mentioned projects are a true example of partnership and a reflection of the cooperation between the universities in Lebanon in addition to other stakeholders like NGOs, incubators and accelerators. We have observed that the students in the region were able to acquire the necessary skills to enter the market as employees or entrepreneurs. Furthermore, the SubNetwork of employability encourages the teamwork spirit among the ecosystem, and this will be reflected on the students as well.

With regards to entreMINE's success, we can proudly state that this Centre is based on volunteering efforts. The team and all the people involved in all of the activities previously listed believe in the importance of entrepreneurship, innovation and seek every opportunity to spread this spirit. Therefore, ultimately, the aim is to be a role model for the students and impact them. It is true that we have a gap in the ecosystem, but our commitment, dedication and believes are the drivers to the success.

Lessons Learned

One of the lessons learned is that the ecosystem is not 100% supportive considering the government, banking sector, and the unstable situation in the country. Thus, the question is how do we keep the youth motivated. Another challenge is to understand how we can involve the industry sector in higher education activity and ensure that universities will do the same with the industry sector.

Moreover, it is important to emphasise the urgency to train teachers on entrepreneurship culture. This is because spreading this spirit among the academic sectors is about the mindset, which involves not only the team directly concerned by entrepreneurship and innovation, but also the administration, the management, the teachers and the students. Therefore, in order to encounter the challenges, we have focused on one of our strengths, which is our human capital and on raising funds for partnerships to implement all the activities we plan for. However, although capital is important, we believe that determination is key to achieve our vision.

Conclusion and Future Outlook

To conclude, we believe that encouraging students to attend courses about entrepreneurship and innovation and/or participate in competitions or orientation days does not have the sole purpose for them to be entrepreneurs. Rather, we also believe that the above mentioned will strengthen their soft skills, character, innovation, creativity and help them to prepare to entre the job market.

CentreMINE and UNIMED will always be beside the Lebanese university students and alumni, and it will always be ready to partner with stakeholders to achieve the objectives, mission and vision.

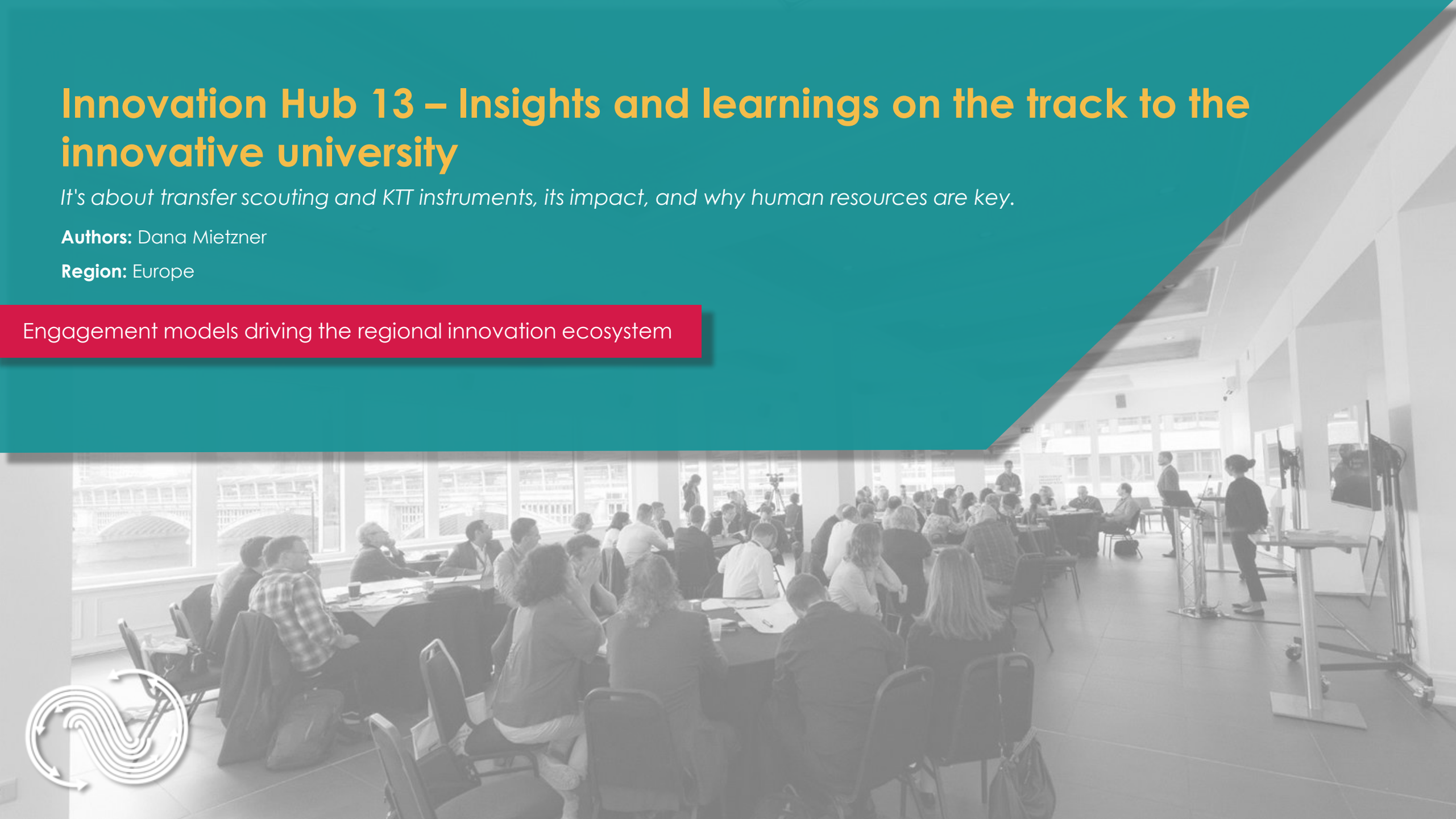
Innovation Hub 13 – Insights and learnings on the track to the innovative university

It's about transfer scouting and KTT instruments, its impact, and why human resources are key.

Authors: Dana Mietzner

Region: Europe

Engagement models driving the regional innovation ecosystem



Background and Objectives

The object of investigation is a new KTT approach, implemented activities, applied structures and involved actors, conducted by two German universities since 2018. The timeframe for this ongoing case study is January 2018 – December 2021. The focus is the KTT mechanisms of TH Wildau and BTU Cottbus – Senftenberg, which are conducted in order to become a so called "Innovative University". The universities under investigation are located in South Brandenburg, Lusatia, Germany between the capital Berlin and the city of Dresden. The region is undergoing a transformation process due to the change in the energy system, a traditional economic backbone of the region. Under the label Innovation Hub 13, it was intended to present and test how the innovation potential of a peripheral region can be positively influenced and systematically built up. The basis for the cooperation between the two universities was their first Joint Knowledge and Technology Transfer Strategy adopted in 2017. As shapers in the transformation process of this region and as actors in the innovation system, the two universities are considered as motors with valuable knowledge and experience. It was assumed that the two universities are in a position to bring together forces and partners in the region in order to tackle the challenges in the region.

@Synovali

Activities Undertaken

A central challenge of KTT in the region was identified as the insufficient direct interaction between universities and industrial companies for joint technology development. The reasons for this are manifold and include a lack of resources on the part of all actors, too little time and a lack of knowledge about each other's competences and needs, a focus on "day-to-day business" or simply the lack of a "common language". In order to overcome these difficulties, a novel KTT approach was the establishment of transfer scouting with designated transfer scouts who can act as mediators and translators between the actors of the regional innovation system (cf. Schneider & Mietzner 2020). The transfer scouts have domain-specific expertise to identify and evaluate transfer potential. Innovation Hub 13 anchors various transfer instruments. These range from virtual tours and showrooms to transfer profiles and technology radars, numerous workshop formats and networking events, to infrastructure facilities such as maker spaces, testbeds or presence points in the project region to interact with (potential) transfer partners.

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Outcomes and Impact

Innovation Hub 13 succeeded in implementing transfer scouting, flanked by new transfer instruments, which is impressively demonstrated by the processing of 89 complex transfer cases (status: 15.11.2021) by the transfer scouts.

Through the use of the transfer scouts, contacts to 448 companies have been established and deepened during the project period to date (status: 12.11.21); in addition, the transfer activities of 210 research groups have been supported. Furthermore, there is a regular exchange with multipliers, through which numerous synergies can be derived for the KTT (status: 12.11.2021 exchange with 130 multipliers). Furthermore, there are 53 conducted networking events and 114 presentations of the Innovation Hub 13 during networking events were tracked.

Lessons Learned

The main element of the Innovation Hub 13 is the transfer scouting approach. Around the transfer scouts, new elements, tools, and forms of interaction are implemented and evaluated. Transfer scouting is a promising way to increase the quality of KTT. However, the potential of transfer scouting depends on the suitability of the scientific achievements and the absorptive capacity of the regional companies and on the scope and knowledge gain of the university-wide research projects, as well as the willingness of the university administrations and scientists to address KTT on an equal footing with research and teaching. Universities are called upon to establish a culture of transfer that allows the academic staff the freedom and capacity to shape it. Furthermore, it turned out to be very challenging to find suitable people with relevant competencies in order to act as transfer scouts. Like many transfer activities is transfer scouting a "people business"; trust, joint understanding of selected transfer goals, approachability, openness for different perspectives but also a profound domain specific knowledge is key in order to identify possible fields of application and to derive further project proposals. In this sense, the scout also makes a contribution in terms of research.

A key element, which was highly underestimated in the beginning, is the key role of science communication, when it comes to KTT. During the course of the Innovation Hub 13, it became essential to translate, condensate, to point out, highlight and consolidate transferable knowledge and technology.

Conclusion and Future Outlook

Innovation Hub 13 succeeded in implementing transfer scouting, flanked by new transfer instruments, which is impressively demonstrated by the processing of 89 complex transfer cases (status: 15.11.2021) by the transfer scouts. The Innovation Hub 13 has achieved a high level of recognition in the region and has developed into a strong brand that stands out for its innovative approaches to KTT and thus also serves as a role model for other scientific institutions. Today, the region of the Innovation Hub 13 is characterised by the establishment of new companies and non-university research entities, also triggered by changes in economic and funding policy developments and new infrastructures. These changes go hand in hand with new demands on the design of numerous regional development conditions and offer opportunities for future transfer approaches. However, transfer scouting demands resources and reliable financial support, which will be the key challenge in the future.

Innovation platform For new female-founded businesses applied from a student entrepreneurship programme

Innovation platform for women lowered the threshold to pitch new business ideas and get support.

Authors: Helena Puhakka-Tarvainen, Satu Mustonen, Heikki Immonen, Heidi Vartiainen

Region: Europe

Supporting entrepreneurs through mentorship and education

Background and Objectives

Especially in the European north and sparsely populated areas, women are a vast minority among entrepreneurs, although the innovation potential is not gender-related. Rather, it is all about the lack of entrepreneurial mindset, self-confidence, role models and proper support. The transnational W-Power project (Empowering women entrepreneurs in sparsely populated communities) had a goal to encourage women to innovate new business ideas and set up enterprises. The model is called an innovation platform for new start-ups and it is based on the Draft program, a model created a decade ago at Karelia University of Applied Sciences to boost university student and staff entrepreneurship. The hypothesis for the innovation platform pilot was that women would more actively take part in a business idea competition targeted directly and only for them. The aim was also to lower the threshold to participate as low as possible by providing a full-online approach. That also dispersed the barriers related to the rural location and long distances, which was another key feature of the target group of this initiative. The participants of the initiative came from Eastern and Northern Finland, Northern Sweden, Northern and Western parts of Scotland, Shetland, Western Ireland, Iceland, and New Brunswick (Canada).

Activities Undertaken

The W-Power innovation platform for women was piloted twice during the years 2019-2021. The first pilot was transnational and covered all the regions mentioned above. The call of proposals was open in three categories: (1) new business ideas, (2) expanding business globally, and (3) ideas to support existing women-run businesses. In total, 24 applications were received, of which 15 were pre-selected for the actual pitching contest. Applicants received support and guidance to create proper pitches. Five-minute pitches took place online and a transnational professional jury evaluated the business ideas in terms of demand, doability and profitability. In addition to the pitch, the jury had a possibility to ask further questions for 10 minutes for each applicant. Based on the scores, five winners from four different regions were awarded a 1000 euros voucher to pilot their business ideas in practice. As a substitute, each winner completed a report of their experiments. The second improved pilot for the innovation platform followed the same protocol and took place regionally in North Karelia (Finland), Lapland (Finland), Norrbotten (Sweden) and New Brunswick (Canada). The approach was similar, but the regions were smaller and each trial was implemented by a local language. Over 20 applications were received in each of the regions scoring 102 new business ideas in total! Regional pitching contests took place with regional professional juries, having members e.g. from business advisory and financing institutes. Best business ideas were rewarded in each region and practical pilots of the business ideas were conducted. In addition to the financial support, the winners were offered business coaching in a gender-sensitive and tailored manner.

Outcomes and Impact

Karelia UAS has implemented the Draft Program innovation platform to promote student, staff and alumni entrepreneurship for a decade already. In a typical call, the number of applications has been ca. twenty, and less than half of the applicants are women. Thus, this specific call for women received multiple amounts of women-driven new business ideas. In general, also the quality of ideas was high and many of the participants (both rewarded and non-rewarded) have continued to develop their businesses successfully. Also, the authorities in each piloting region have been impressed and all of them are about to continue the practice although the project funding has ended.

Also based on the feedback collected from the participants, it is clear that there is a specific need for a targeted business idea competition initiative for women. Nearly half of the second pilot respondents stated that they consider their participation in the competition as an important push towards becoming an entrepreneur, or alternatively, it supported those who had already started their businesses. In addition, many of the respondents stated that they may not have had the courage to participate at all without this special targeting. All participants who pitched their ideas to judges received valuable expert feedback about their business ideas. Participants were also able to network among the other competitors and build new partnerships. Based on the feedback, participating, in general, was an empowering experience.

Lessons Learned

The key point for success was both a profound background study of existing best models to arrange innovation platforms for new start-ups and being aware of the barriers, which usually hinder women to participate in such initiatives. Draft Program by Karelia UAS was selected as the baseline, over which the pilots were built. Careful planning of the process, timeline, guidance, contractual issues, judging criteria and many other details were critical to managing the innovation platform successfully. When the first pilot call was launched, each project partner was engaged to make grassroots marketing in their regions both in business advisory organisations, in events and meetings, newsletters and brochures, and directly to potential participants.

Gender sensitivity, or rather a human-centric approach was the key driver for all actions. Applicants were treated positively and with encouragement, they were helped to improve their pitches before the actual contest, online testing possibilities were offered to avoid technical hassles, and each participant was provided with a summary of instructive feedback by the jury members. Also, possibilities to network among the participants were offered, which opened extra synergies. After the second call, also some targeted business coaching was provided. Feedback was collected after the first pilot, which helped the project team to further develop the second pilot. As the second pilot round was regional, it was possible to take into account regional special features. Feedback was also collected from the jury members, which helped to evaluate the process from the business advisory and funding point of view. As the process was planned carefully, no major challenges or obstacles came across. The covid-19 pandemic would have caused difficulties if the initiative wouldn't have been an online approach already in the first place.

Conclusion and Future Outlook

The W-Power innovation platform, created and targeted especially for women, lowered the threshold of women to pitch their new business ideas publicly and to get support to their ideas in terms of seed-funding and business coaching. Feedback on the initiative has been positive from the participants, jury members and the organising institutes. In fact, the concept will continue in many of the regions as a permanent business support practice after the project has finished. Excellent new businesses got a kick-start from the innovation platform and are now up and running. The variety of the businesses is wide from a gluten-free bakery to artisan glass products, and from inclusive interior design to well-being courses in a forest. Many of the rewarded participants have already gained success and are now functioning as role models for the next generation of applicants.

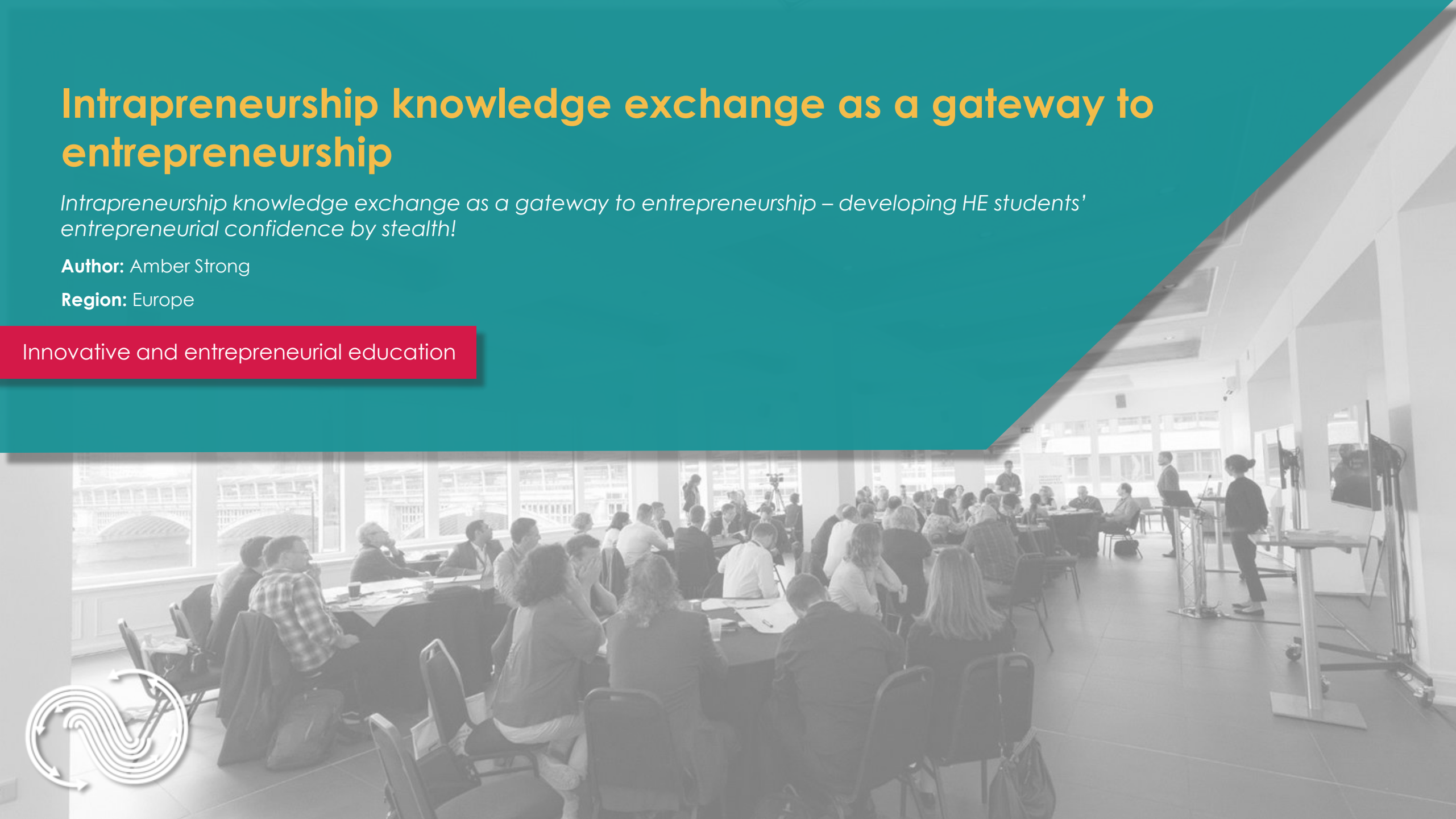
Intrapreneurship knowledge exchange as a gateway to entrepreneurship

Intrapreneurship knowledge exchange as a gateway to entrepreneurship – developing HE students' entrepreneurial confidence by stealth!

Author: Amber Strong

Region: Europe

Innovative and entrepreneurial education



Background and Objectives

The Intrapreneurial Knowledge Exchange Enterprise Pathway (IKEEP) Programme is an extracurricular intrapreneurship-focused knowledge exchange training programme, led by the university of Exeter and delivered across the universities of Bath, Bristol, Exeter and Surrey.

Key deliverables include engaging 800 new students in IKEEP training (a target we doubled) and introducing more students for under-represented student groups to enterprise education, creating interdisciplinary opportunities for knowledge exchange as well as knowledge exchange between students and regional business through the remote working industry project placements.

Intrapreneurship is entrepreneurship within an organisation. Students can develop entrepreneurial skills and experience without needing a business idea of their own.

We use a training programme and remote business placement to:

- encourage the development of an entrepreneurial mindset across university students regardless of discipline or course title;
- engage students from underrepresented groups and students new to entrepreneurial development opportunities; and
- aim for 60% of students matched to IKEEP industry project placements to be postgraduate students (either Postgraduate Taught or Postgraduate Research).
    - Mixed teams of students on the placements encourage knowledge exchange, both interdisciplinary, multi-institutional and between HE students and regional industry. We consider IKEEP to be a feeder to the ‘entrepreneurial development pipeline’ within the Higher Education Institutions involved.

Activities Undertaken

We developed the Intrapreneurial Knowledge Exchange Enterprise Pathway (IKEEP) Programme, co-funded by Office for Students: A co-curricular intrapreneurship and innovation-focused knowledge exchange programme, where students receive online training (self-directed, a-synchronous and synchronised interactive online training) via video call. Students go through a competitive process and interdisciplinary teams of three are matched with regional organisations to develop innovative solutions.

Led by the University of Exeter, IKEEP involves undergraduate (UG), postgraduate taught (PGT) and postgraduate research (PGR) students from any discipline at the Universities of Bath, Bristol, Exeter and Surrey. The IKEEP programme is worth the equivalent of 10 credits.

Since IKEEP launched in September 2020 we have trained over 1,862 students from across the four UK partner universities of Bath, Bristol, Exeter and Surrey and managed over 438 students on 140 industry project placements.

Outcomes and Impact

Since December 2020, over 1,862 students have completed the training element of the IKEEP programme, this study primarily covers feedback from 509 students and is limited to students from the University of Exeter. We also surveyed the businesses who hosted teams of IKEEP project placement students, many of which were young businesses involved in the University's Business Scale-Up programmes. Commonly reported benefits include: fresh insights, renewed enthusiasm for refined value proposition, new markets accessed, and experience of leading and managing staff as well as an appreciation for the skills university graduates bring. IKEEP Projects resulted in follow-on internships and employment for some of the students involved. IKEEP project placements have had a significant positive impact for the local economy and business community, a key thread of the new University of Exeter strategy. Over 40 students have so far been employed by the orgnisations they completed an IKEEP Project Placement with, leading to increased graduate retention in the region.

After hosting an interdisciplinary IKEEP student team during 2021, Charlie Young, Joint Managing Director of Plastron UK reported that "Plastron was great for our business and worth its weight in gold". One of the students on this placement was employed by Plastron UK part-time after the IKEEP project placement.

We report on student feedback collected from December 2020 to June 2022. We focus on various aspects of students' entrepreneurial intent pre- and post- training:

- Trends in career planning prior to training: we look at where students "see themselves" straight after graduation and two, five and ten years after they graduate.
- Changes in career planning as a result of the intrapreneurship training intervention: quantitative changes in students' career planning upon completion of the training (compared to before training), while considering directly related qualitative feedback.
- Changes in perceived entrepreneurial capacity as a result of the intervention: we consider how equipped students feel to be entrepreneurial as a result of the intrapreneurial training.

Lessons Learned

We learned several key lessons as a result of developing the IKEEP Programme.

The word entrepreneurship can scare away less confident and non-business school students who worry that they 'do not know enough about business' to apply to take part in an entrepreneurship development programme and risk missing out on developing their entrepreneurial potential.

We found using the terms 'intrapreneurship' and 'innovation' in student-facing marketing materials useful to ensure the programme was taken up by a wider range of students, not only business school or highly confident students.

While not an initial aim of the programme, through the context of covid-19 restrictions, we learned that students can learn intrapreneurship and entrepreneurship through purely online teaching methods. We also found that the remote interdisciplinary 4-week industry project placements worked very well in a purely remote working format and see that the remote working format offers more advantages than disadvantages as an intrapreneurial development opportunity.

Having received tremendous interest and engagement from both students and businesses. The main challenge has been around effectively sharing data across four different UK universities. We are tackling this challenge with the development of an online platform system that will straddle all the universities involved.

Conclusion and Future Outlook

Less self-assured students often intersect with students who comprise traditionally under-represented student groups. Important to dispel the toxic pop culture 'millionaire workaholic' myth of entrepreneurship and cement the EntreComp understanding that entrepreneurship can be learned, that diverse teams are necessary for innovation and creating value from ideas can be practiced. Creating value from ideas requires diverse teams, with skill sets from across all disciplines, impacting all industries.

We conclude that;

- Intrapreneurship has been successfully trialed as a method of engaging students that do not usually engage with enterprise education.
- Intrapreneurial training influences students' career planning.
- Intrapreneurial training increases how equipped students feel to be entrepreneurial.
- Universities that want to encourage their students to become entrepreneurial change-makers should start with intrapreneurial development opportunities to effectively widen engagement.
- A longitudinal study is needed to better understand the impact on graduate employability and future entrepreneurial behaviour.

Invest For entrepreneurial education!

We need to foresee future and grow entrepreneurial competences, skills and opportunities for all.

Authors: Liisa Timonen, Marjo Nenonen, Jaana Tolkki, Heikki Immonen

Region: Europe

Innovative and entrepreneurial education

Background and Objectives

The world around us is changing faster and faster. The work changes and new professions arise daily, population ages and the need to consider and take responsibility of climate change grows exponentially. The transversal competences like creativity, initiative, tenacity, teamwork, understanding of risk, taking responsibility and having resilience are more needed than ever; and those competences can be supported with innovative and entrepreneurial higher education.

Streamlining the process of innovative and entrepreneurial higher education for all is one of the key challenges in higher education. Innovative actions and good practices are needed for all the Europe's benefit as we need to increase competitiveness and productivity. The entrepreneurial competence development should be embedded into all types of higher education from degree studies to various modes of continuous learning. That is what we do in our INVEST European University Alliance.

In INVEST, the accent is put on gaining knowledge, skills and attitudes necessary for sustainable and responsible regional development in its broad sense. One of the three focal points is to educate entrepreneurial thinking, business skills and leadership in a way, where independent and critical thinking, civic consciousness, sustainability and responsibility are crucial. The other two focal points are water, energy, food and environment nexus and quality of life. INVEST aims at fostering sustainable and responsible entrepreneurship and entrepreneurial mindset in regional economies. We do this by building joint, international, entrepreneurial learning pathways for students, and collaborate closely with our working life partners.

The aim of this case is to first, share and spread the applicable process and some results of our INVEST alliance project, second, encourage others to apply the tools in curriculum development supporting quality and relevance of higher education. Finally, the aim is to raise the awareness of our European University alliance and invite new members into the dialogue.

Activities Undertaken

INVEST develops engaged education addressing labor market needs in the partner regions. Most of the partner regions lack of competent labor due to ageing and thus decreasing population. We aim at providing flexible study programs and continuous education benefiting from online learning and various public training opportunities. Graduates and lifelong learners with innovative and entrepreneurial mindset can have a positive input into the regional economies and well-being.

INVEST exploratory entrepreneurship pathway is to be built with an open and flexible manner that enables the students' participation not depending on their study status. The pathway will include different types of learning opportunities: entrepreneurial studies (number of ECTS and micro-credentials available to be confirmed), business innovation and idea generation programme & competition, hackathons, innocamps and different forms of coaching. Students can include these into their INVEST specialisation programmes, full degrees or continuous learning bucket to re- and/or upscale competences while already being in the working life. Also, teachers' ability, competences and skills to foster innovative and entrepreneurial education are supported within the joint staff development process.

Entrepreneurial education is embedded into the education development entity, where we do a lot. First, we build 16 joint degrees, 3 summer schools and 3 winter schools, and create pathways for continuous learning. We also create INVEST Living Labs into all the partner regions together with the business partners. We also build thematic research groups and facilitate flow and co-creation of knowledge with our training of trainers programme. ToT programmes enable peer learning and co-creation of competences and skills. All these key areas include physical, virtual and/or hybrid mobility and enable involvement and participation. The opportunities to discuss and elaborate entrepreneurship among all these is systematically worked with.

Outcomes and Impact

As the key outcome, we aim to establish a visible and recognised innovation ecosystem serving entrepreneurial learning, innovation and actions. In this innovation ecosystem, the learning pathway will include elements of Business Academy, DRAFT-programme, Epic Challenge, Entrepreneurial Week and Start me up-competition. These innovations and learning tools are already existing and in active use at Karelia University of Applied Sciences, who coordinates the entrepreneurial education development in INVEST. Some of the actions in North Karelia, Finland, are open for the students from vocational education, universities of applied sciences and academic universities and some even to staff members. The diverse, multidisciplinary and cross-sectoral approach offers a floor for meaningful competence development, and is to be modelled in INVEST alliance, too.

As the INVEST exploratory entrepreneurship education pathway is still under construction, at this stage we can share reflections over the process and some estimations about the benefits and impact. All the higher education graduates, no matter what their major or degree is, do need these competences and skills. All of us dealing with the process need to constantly and carefully while applying, and later, while implementing, consider how to ensure the use of the results. The key element here is the real integration with the organisational strategies, curriculum development processes and actions among all partners. When we do develop things that are directly driven from our strategic aims and goals, we are definitely on the right track.

The beneficiaries are the HEI students, both degree students and lifelong learners, HEI staff, regional businesses and working life as a whole. With our actions, we can in our turn support the regional employability, competitiveness, productivity and responsibility to foster a sustainable future for us all.

Lessons Learned

The INVEST exploratory entrepreneurial pathway will support concrete innovativeness of education, development of teachers' and students' competences as well as increase numbers of virtual and physical mobility. Thus, the integration of the results into everyday practices in organisations is part of curriculum development and HR-development processes – what we do remains and grows in time.

Yet the process is not so simple as it might sound. The primary challenges met so far are the several parallel development processes we are working with, difficulties in harmonising the offering of studies at partner HEIs enabling joint actions and use of resources, different approaches in staff competence development, timing challenges and even different kinds of interpretations of what making the aims and objectives alive means in practice.

There is no short-cut to mitigate the challenges – or at least we haven't found one. Our process relies on systematic co-creation, open dialogue, negotiations, agile development allowing testing, failing and learning, and openly shared documentation. We just need to devote a lot of time for simply working together to create and design processes and tools that are applicable for all. And we need the acceptance and support of the HEI management of all the partners to enable the change. In practice, it means compromises, adjustment of requirements, and re-thinking, where possible, and creating a lot of involvement and ownership for the whole process.

Conclusion and Future Outlook

The more challenging and constantly changing operational environment drives the higher education institutes really to consider how we can achieve the results, meet with the future working life and rapidly changing society and build a bright world for us all. This consideration recalls a strategic, profound and open operational environment supporting quality and relevance of higher education, meeting with the needs and looking for the future.

Building and promoting innovative and entrepreneurial education is one of key tools in this strategic development process. As a long-term priority, with INVEST innovation ecosystem serving entrepreneurial learning, innovation and actions, we will be working to strengthen the university-business relationships to become a driver of the sustainable and responsible development of the regions and an active part of the regional economy and community.

LivingLab@UWA: Paid on-campus work-integrated learning for engineers

Universities are an untapped resource for specialist testing equipment and student labour valuable to industry.

Authors: Melinda Hodkiewicz

Region: Australia

Engagement models driving the regional innovation ecosystem

Background and Objectives

University engineering facilities are home to millions of dollars of high-quality testing equipment. Much of the testing equipment has been purchased with Government Grants. Examples include tensile testing units, vibration shakers, wind tunnels and spectrum analysers. Utilisation rates for this equipment is low, on average less than 10% per annum. This equipment is often regarded as 'owned' by the academic who won the grant that purchased the asset and in whose laboratory the equipment sits. Researchers who originally used the equipment often left years ago. Cash is seldom made available for training, annual maintenance, software upgrades and calibration.

Western Australia (WA) is home to economically significant mining and gas operations. Most of these operations are in remote, arid and challenging environments so there is much interest in developing autonomous sensing systems to take the place of people on site. One challenge for both operators and sensor developers is to ensure new products will survive the harsh operating conditions. However, innovators find it difficult to access sites to prove up results and operators are averse to trialing/ or introducing innovation without proven results. Traditionally equipment reliability is assessed by specialist laboratories using accelerated life testing methods. However, none of these laboratories are in WA.

The goals of the LivingLab@UWA project are to 1) to establish a sustainable ecosystem for environmental testing to de-risk the introduction of new Industry 4.0 internet-of-things (IOT) sensing systems for the resources sector, 2) leverage existing university test equipment and infrastructure, including HR, legal, and finance systems, 3) employ students to execute the work and develop their professional skills, 4) increase connections between the university, resource companies and the start-up community and 5) share the learnings with other universities through our web site https://livinglabproject.com/.

Activities Undertaken

We applied for, and won, a two-year government-industry grant of $200,000 to fund the project. Matched funding was provided by METS Ignited, an Australian Government Growth Centre, and the BHP Fellow for Engineering for Remote Operations at UWA, a Fellowship sponsored by a major Australian resources company. The project developed in five parallel areas as follows: 1) market research to identify companies with products for testing, 2) engineering test development to locate suitable testing equipment on campus, gain permission to use, learn to use, and develop written test procedures, 3) HR structures for hiring, onboarding, and paying students doing the work, 4) procedures documenting the end-to-end process for testing including non-disclosure agreements, safety procedures, data collection, project management and reporting, and 5) development of a web site https://livinglabproject.com/.

The process for engaging with LivingLab testing starts with completion of an expression of interest. The LivingLab team receives this and organises an in person or virtual meeting. At this meeting, the technology readiness of the product is assessed and the capability of the LivingLab to add value is discussed with a focus on identifying where the most advantageous opportunities exist. For the next step, a Confidentiality Agreement is written and signed, if required, before any technical discussion or exchange of documentation continues. The LivingLab team co-creates with the client a proposal identifying potential failure modes in the device that may be expected during operation. Once the testing program and schedule is confirmed the devices are provided for testing. The LivingLab team conducts testing on the devices, communicating regularly with the client, documents results, and writes a report before a final handover meeting with the client to discuss the results.

Outcomes and Impact

Over the last two years, five products underwent ALT for vibration, water and dust ingress, and heat and ultraviolet vulnerabilities. The first unit was the product of an intrapreneur group inside a major international resource company. Three products were designed and developed by local manufacturers, and one was developed here at UWA. All are IOT-based sensing systems. In all cases the ALT revealed issues that resulted in modification to product design by the developers before manufacturing was scaled up.

The LivingLab team engaged 13 students in paid casual, on-campus, contract work. The students collectively earned over $150,000. Three students were appointed to manage all aspects of the project and coordinate the work of the other students as well as internal and external stakeholders. This decision to leverage students as project managers significantly reduced the time required by the academic leading the project and provided invaluable management training for the students. The project involved 11 stakeholders within the university; mostly professional staff in campus management, engineering technicians, and finance and safety representatives. External team members included three from the CORE Innovation Hub (https://www.corehub.com.au/), a representative from the government funding body (https://metsignited.org/) plus representatives from the product companies.

Other outcomes include:

- Development of a comprehensive web site https://livinglabproject.com/ to enable companies and other universities to understand the processes we have developed.
- A process for accessing the university's asset registers to identify infrastructure and test equipment held by academics in their labs.
- Development of administrative, legal, safety and technical procedures to support testing of company products on university equipment.
- Development of twelve procedures for testing for UV, vibration, ingress protection, and temperature to improve reliability and de-risk product certification testing.
- Awareness in the WA community for the engineering facilities and skills at UWA.

Lessons Learned

One unexpected challenge faced by the project was to find IOT products at a suitably mature stage of development for the testing to be value adding. Many prospective companies that contacted LivingLab had products at Technology Readiness Levels (TRL) of 3 and 4; ideally these should be at TRL 5 or above to be ready for ALT. There were also a number of delays associated with products needing to be manufactured or redesigned prior to testing. Internal to UWA there were challenges with establishing ownership of assets, finding poorly maintained equipment and the need to spend time and money to upgrade/retrofit existing equipment to fit the needs of the LivingLab. In one case we spent $5000 to service and calibrate a vibration shaker.

The critical factors for success were:

- Employing high calibre students who can collaborate, with good hard (technical) and soft (people) skills.
- Support of the university's professional staff who assisted with developing and managing the processes.
- Engineering support from the university's technicians to teach the students to use equipment and in some cases design fittings.
- Developing the website.
- Investment in using collaborative software tools and weekly meetings.
- Test scheduling that avoided periods when students needed to concentrate on their studies such as end of semester.
- Freedom to operate autonomously from the funding body and the university, especially in the early days of the project.

The website was particularly important as its development forced us to consolidate our ideas, limit our ambitions and describe clearly what we could do. It has also now become a vehicle to disseminate information about the LivingLab model to others.

Conclusion and Future Outlook

Universities are an untapped resource for specialist testing equipment that can be used for accelerated life testing of new IOT and other products for the industry. Effective utilisation of this equipment, and a business model to support its use and maintenance, is necessary.

The LivingLab project has made the space between the university and resources community more porous to the benefit of both. This cannot be an ad-hoc arrangement though. University systems can be difficult to negotiate, and more transparent processes and cost structures should be developed to support industry engagement.

Student engineers are a competent and untapped resource for conducting testing and trials. 13 students were involved in the LivingLab project. They developed technical, liaison, and reporting skills in the process.

There is a widespread recognition of the need to provide student engineers with real world experience. Working in the LivingLab contributes to this goal.

Nurturing engagement: Increasing opportunities through COVID for the University of Sydney Business School stakeholders

Gain a 90% increase in industry collaboration through a holistic approach to engagement activities.

Authors: Fiona O'Sullivan

Region: Australia

Cultural change and building trust for university-industry engagement

Background and Objectives

The University of Sydney is ranked fourth globally and first in Australia for graduate employability. With more than 16,000 students studying undergraduate and postgraduate degree programs, the School's vision for developing future-ready graduates pivots on providing every pre-experience student with meaningful and scaffolded opportunities to develop employability skills. A key enabler for meeting this objective is developing strong and mutually beneficial external partnerships across a range of different industry sectors. Another – and in many ways more challenging - requirement is fostering an ethos of external engagement amongst faculty and, administrative staff.

Through the implementation of an External Engagement Operating Model and Framework supported by a central CRM, the external engagement activities across the Business School have been better captured providing greater opportunity to leverage the industry partner relationships to provide opportunities for all stakeholders. The Business School has been actively engaged in breaking from the tradition of disengaged inquiry and our approach and experience thus far is, we believe, instructive in the strategies, tactics and challenges for becoming fully engaged with external partners.

This paper overviews and assesses The University of Sydney Business School's initiatives to date in developing external partnerships and an ethos of engagement within the School. In particular, the paper:

- details how through the accurate collection of engagement activities data, the opportunities available to industry partners to engage with The University of Sydney Business School were strategically developed;
- illustrates how working closely with industry partners integrates contemporary expertise and practical business experience within students' learning;
- highlights how utilising appropriate CRM systems enables a holistic approach to industry engagement; and
- reflects on the learnings in moving from a linear silo /discipline approach to engagement to a cohesive engaged model which measures the impact of engagement activities across employability activities.

Activities Undertaken

This is an ongoing project to ensure the full benefits of an engaged Business School continue to be maximised. The project started in 2018 with the integration of three existing CRM instances and the creation of a new CRM instance designed to meet the specific employability activities across the Business School.

The External Engagement activities are collected and reported on each Semester. To assist in the collection of data at source specific webforms were created for use by all staff. This reduced the requirement for double and manual entry and also enabled engagement activities to be collected in real time as opposed to historical data being relied upon. In addition, an opportunity to nominate industry partners for a Digital Certificate which could also be linked to their LinkedIn profile was created. This also allows industry partners to easily demonstrate their engagement with universities.

The types of activities each industry partner is involved in, are recorded and used to build a strategic approach to the industry partner and to ascertain how a deeper relationship can be established to provide greater opportunities for Engaged Scholarship across the industry partner. In addition, the roll out of the CRM across the rest of the University has allowed for greater collaboration between Faculties and Schools to work and engage with specific industry partners. This collaboration has resulted in specific programs being developed in conjunction with the industry partner to provide students with employability skill development and academics the opportunity to share knowledge and co-create curriculum bringing real world opportunities into the student's learning.

This case provides the steps taken to instigate the initial changes from a silo / discipline approach to an ethos of an engaged holistic approach and how this approach was then adopted across the University as a whole.

Outcomes and Impact

In a highly competitive market for meaningful industry engagement opportunities, it's essential to build and maintain mutually beneficial partnerships with industry across a wide range of sectors.

Short term and immediate impacts have been an increase in alumni and industry engagement. Since 2019 there has been a 90% increase in engagement through the development of specific programs, such as the 'Business Not as Usual' Webinar series. This series was initially developed in response to COVID in March 2020 with 9 webinars being delivered during that year. The 2020 webinars received over 5300 registrations from 28 countries. During 2021, we delivered a total of 5 webinars and saw an increase in registrations to over 8500 from around 30 countries. These webinars will continue to be delivered and involve our academics, industry partner and alumni as panellists.

Other initiatives have included Business projects being incorporated into the student's learning through our Capstone Units and elective Business Practicums which run throughout the semester. In addition, we introduced shorter nano projects within our award winning 'Job Smart' program and the 'Dalyell Scholars Wicked Problems Forum'. Another new program was 'Living in a Post COVID World' initially a pilot program for deferred students in Semester 1 2020 which incorporated guest lectures from a range of industry partners. The success of these programs has meant they have been continued and the industry partners remain engaged. Another program developed in 2021 was the 'Unconventional Careers' series. This was led by members of our Business Alumni Network to showcase entrepreneurs and the different pathways open to students.

Engagement activities are reviewed so the impact can be effectively measured. Evaluation is carried out via post engagement activity surveys and where the engagement activity is part of a work-integrated-learning activity, assessed utilizing marking criteria within the Unit of Study.

Lessons Learned

Throughout the project, the main requirement has been to foster an ethos of external engagement amongst faculty and administrative staff. Naturally, from the staff perspective when dealing with interpersonal relationships there is always the desire to maintain close contact with the individual industry partner and a perception that the staff member 'owns' the relationship. When operating from this philosophical viewpoint there is a reluctance to share details and to have these captured within a central system for fear someone else may reach out and 'damage' the relationship. This is especially true when academics have spent many years cultivating research relationships and their research output, along with promotional opportunities, may be negatively impacted.

To overcome these challenges and develop a holistic approach to engagement it is essential to build trust with key staff. Much of this trust building was achieved through the sharing of our own industry contacts and bringing in industry partners to work with relevant academics on both Engaged Research projects as well as providing high quality industry partners to take part in the co-creation and co-delivery of curriculum and work integrated learning activities such as Capstone Business projects, placement opportunities and sourcing and securing panellists and guest lecturers.

In addition, taking responsibility for the oversight of industry partner collaboration agreements and streamlining the processes for academic and professional staff has also demonstrated the benefit of working closely with the External Engagement team thus leading to an increase in requests for support. By sharing our own industry contacts, staff have realised the benefits of a holistic approach and in turn have been more open to sharing their own industry contacts. In turn this enables us to capture the employability data and develop strategic approaches to deepen engagement and create strategic partnerships with key industry partners.

Conclusion and Future Outlook

The transition to an ethos of engagement is a delicate process, the main challenge being the capturing of data and individual's contacts' details. It is essential that all parties are comfortable with the security and visibility access levels of others accessing the system. However, when trust is built and quality data is captured, this is used to demonstrate the many benefits of this approach through developing collaborative opportunities for engagement with industry partners. The captured data enables analysis of different levels of engagement within an organsiation so that opportunities can be maximised. This is turn leads to the development of strategic partnerships with key industry partners.

Moving forward, the implementation of webforms to capture data at source in a streamlined way reducing the staff workload and the integration of the CRM with other main platforms which capture engagement activities will ensure the continued success of the engagement strategy.

‘Octopus’ initiative: an integrated and comprehensive partnership governance model for Ca’ Foscari innovation ecosystem

A holistic and pervasive approach to knowledge transfer - the Ca' Foscari Octopus.

Authors: Giovanna Berera, Samuela Franceschini, Erica Brandolino

Region: Europe

A strategic approach towards enhancing partnerships

Background and Objectives

The change of governance at a University may bring with it a change in the objectives of the third mission and the need for the departments involved in knowledge transfer to design new initiatives capable of responding to new expectations while maintaining a high standard in terms of support for entrepreneurship, research exploitation and university-industry collaboration. At Ca' Foscari, the majority of the departments belong to the social sciences and humanities fields. In this context, the first objective assigned by the new governance to PInK - Promoting Innovation and Knowledge (the Knowledge Transfer Office) - has been to increase the engagement of these research sectors in collaborative activities with industry.

Building on this and participating in the writing of the University's strategic plan, PInK sought a concrete and wide-ranging approach to design a KT framework involving the University as a whole, valuing all skills and competencies for university-industry collaboration. Participating in the "UIIN Strategic Partnerships Pilot Program" was the start of a process that led us to think about the activities to be developed and the resources needed.

From the beginning, it was clear to us that it was necessary to:

- expand the areas of activity and the structures/offices involved in KT, thus the choice to compare the new programme to an octopus;
- think of the framework as an ever-open platform able to be adapted to new needs and to meet the needs of all stakeholders by using co-design methodologies wherever possible (thus the choice to design a new strategic partnership model for the University Innovation Ecosystem integrating almost all actions of the university so-called "third mission" and with a comprehensive approach to valorisation, collaboration and engagement).

Activities Undertaken

"UIIN Strategic Partnerships Pilot Program" helped identify a road map that enabled PInK to design this flexible university-industry relationship, capable of taking into account the changing needs of the parties.

To be able to engage the SSH departments, scouting of the competencies and the research in this area had to be prioritised, along with a survey of how the relationship between university-industry was understood within the different departments. The latter gave us a better understanding of the need to debunk certain myths, such as that SSH research is not of interest to the business sector. The former is still ongoing, but it already sparked some interest among young researchers.

Another pillar of our platform stands on the review of internal regulations for the protection of research results in all its different forms. The goal is to give value to results in the SSH research and involve students' startups in transferring knowledge to the business sector and society.

Finally, the actual relationship University-Industry was tackled first by dedicating part of the survey to understand how our external partners see this relationship and secondly by trying to engage our associates in co-design new forms of collaborations. PInK conceived with one of its partners a new format for vertical events on specific topics, playmaking around the innovation funnel, and used it to brainstorm with other stakeholders possible solutions to the challenges faced by society and private sectors.

PInK is also in the process of developing:

- new joint lab with industries where resources are shared with the goal to expand the applicability of the knowledge developed at Ca' Foscari;
- co-design collaboration labs for researchers and students to find solutions to industry challenges; and,
- a new affiliation programme that aims to become the Ca' Foscari "nursery" where industry can find talents and entrepreneurial innovative.

Outcomes and Impact

As stated, our initiative is open and ever-changing, but the first significant outcome was the inclusion of the proposed objectives and actions within the University's new strategic plan and in the 2022 - 2024 Performance Plan. This step was fundamental because the strategic plan will clearly guide the investment.

The design and development of a University ecosystem acting as an accelerator for research projects and activities involving the knowledge triangle, supporting the entrepreneurial mindset of young students and researchers, fully meets the holistic and integrated approach to knowledge transfer that we want to promote. The adoption of this initiative gives us confidence in the sustainability of the actions we are going to take.

The new revised regulations on IP adopted by the governing bodies are intended to be a general reference for intellectual property, research exploitation and entrepreneurship. This revision brought about an important deliverable: the implementation of a new engaging tool-pack for researchers, administrative personnel and third mission offices. This tool-pack is an online consultancy service for IP and entrepreneurship management, as well as a guideline to engage external partners.

Another significant result is the approval by our board of directors of a framework agreement for the creation of a materials science laboratory, which we are now in the process of finalising. This laboratory represents a good outcome of the work for enhancing strategic partnerships approach, involving the SSH and integrating research and education.

A key outcome is the setup, co-design and implementation of a new matchmaking formula that we called playmaking around the innovation funnel. This new approach to university-industry collaboration and co-design on vertical themes allowed us to start creating a community and share common values to drive internal and external engagement and knowledge transfer.

Lessons Learned

Designing the initiative within PiNK, we realised that internally there was a low awareness among academics, leadership, and administration on values necessary for university-industry engagement and a lack of clarity on the decision-making process on strategic partnerships and knowledge transfer. Thus, on one side, we started to constantly elaborate and present to the leadership (both at the central and departmental level) reports on internal surveys, other national and international experiences, ideas for the creation of a university ecosystem; on the other, we designed the new regulations with the aim to engage researchers from the SSH and to valorise the research results in this area. We think now that the new comprehensive University regulation on Knowledge transfer (Intellectual Property and Ecosystem) with one single commission for dealing with IP issues, entrepreneurship and affiliation, would create a common ground of values for the governance of integrated and comprehensive partnerships with industry and other key actors for enhancing research and innovation.

Another internal challenge relates to the academics' perception of lack of opportunities, lack of funding, internal bureaucracy and low to medium support for partnering. With the objective to overcome this challenge2, we implemented the above-mentioned engaging tool pack, providing for online consultancy on IP and partnering to both researchers and research collaboration management in the departments. And for young researchers, we designed and started implementing a "KT nursery".

The main "external" challenge to the initiative is to get a real and effective understanding of the industry needs. In our opinion, the main solution is constantly updating our engagement mode and adopting a co-design approach with partners and stakeholders. For example, the new matchmaking formula, the playmaking beyond the innovation funnel, should allow us to create a community where needs come up and drive the collaboration.

Conclusion and Future Outlook

The "Octopus" initiative is still a work-in-progress platform that will see the PInK office constantly committed to:

- gaining internal engagement and establishing a common understanding and approach to university-industry collaboration and also involving the departments working in SSH;
- further building and developing models and collaboration for implementing an Ecosystem where different stakeholders can find a good place for co-design, share solutions and drive innovation paths;
- staying open to maintain a constant exchange and collaboration with organisations dealing with KT at national and international level, aware that sharing experiences, especially with partners in different contexts, is the key for hybridisation and the creation of an innovative and evolving ecosystem.

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Research and work-based learning ecosystem in YUFE alliance: The challenge teams experience

Multicultural multi-agent teams with a multidisciplinary approach addressing specific challenges bringing novelty to the solution.

Authors: María José Herrero-Villa, Anastasia Constantinou, Sarai Lopez-Vastro, Elena Christodoulou

Region: Europe

Innovative and entrepreneurial education

Background and Objectives

YUFE (Young Universities for the Future of Europe) Alliance gathers ten dynamic, young, student-centred research-based universities and four non-academic partners from the non-governmental and private sector for an impactful European University. Together, the YUFE partners will establish one of the first true European Universities. The first cohort of the projects for the future European project is dated in 2019.

One of the core elements of YUFE is "Entrepreneurship and Innovation", in which the "Challenge Teams" have developed a new and alternative educational training based on a problem-based approach. The method agreed upon in this framework takes into account the following considerations:

- Creation value at the YUFE level is more than replicating domestic initiatives. Therefore, inspired from all YUFE partners' best practices the "YUFE Challenge Teams" has its own definition and identity.
- Since YUFE Alliance covers an important geographical extension and cultural diversity, special care has been taken for describing a broad and consistent framework and clear guidelines so standards are shared all along with teams.

YUFE Challenge Teams gather students, researchers, experts (public/private sector), and citizens from different knowledge fields working together to achieve one or various feasible and innovative solutions to a social, scientific, or technological targeted challenge stemming from real-life cases. These problems can be regional, national, European, or global.

The main objectives can be summarised as:

- Boosting challenge-oriented education and innovation.
- Strengthening fundamental values of our societies such as empathy, solidarity, and social cohesion.
- Contributing to solving social, scientific, and technological challenges.
- Acquiring knowledge in the specific topic of the challenge as well as soft skills within the European Entrepreneurial Competence framework.

Thus, the YUFE Challenge Teams are multi-agent teams involved in a multidisciplinary approach addressing a concrete social, scientific or technological challenge and bringing novelty to the solution

Activities Undertaken

After hard work defining and shaping the methodology during 2020-2021, this has been tested in the first edition of the "YUFE Challenge Teams". During the current academic year, two challenges have been piloted.

The undertaken activities flow and considerations are:

- The team is formed for a defined goal and ends with it.
- To validate the team, a minimum number of agents´ roles from students, researchers, experts, and citizens is required.
- The common recognition of an "innovative solution" is based on two international, well-known, and complementary perspectives given in i) the Oslo Manual and ii) the European Entrepreneurship Competence Framework (EntreComp).

Challenges might emerge from several stakeholders, citizens, or actors in our societies. To organize the workflow of the Challenge Teams, there will be an annual open call published on the YUFE Virtual Campus, with four cut-off dates per year before the beginning of every trimester.

After each deadline, a Validation Committee will review the eligibility of the proposed challenges according to five validation criteria (innovation, multidisciplinarity, concreteness and feasibility, solution proposed, and interest for the YUFE community).

Once a challenge is identified as a YUFE Challenge, a Participation Call is organised to attract participants to the teams. Teams will be defined in number and members depending on the received applications. The participation of a researcher and an expert in the field of the challenge are required for the team formation and 3-month execution.

The model for the YUFE Challenge Teams is outstanding and unique being based on the following characteristics:

- The active participation of the agents of the Quadruple Helix model from which benefits students, empowers citizens, and offers a bottom-up approach to the initiative.
- Diversity. YUFE is considered an ecosystem. Teams´ definition observes criteria to ensure their multicultural and international dimension.

Outcomes and Impact

The "YUFE Challenge Teams" presents a consistent and innovative international framework for entrepreneurial skills training as a competence, not only for a future professional careers but also for personal development.

"YUFE Challenge Teams" provides an innovative method to procure an intense experience for the students and participants based on the result/user orientation approach, learning on teamwork and project management, and Agile principles' practices.

Specifically, the value proposition to the agents involved are:

- For students, stimulated by a new learning experiences and soft skills training for their future based on teamwork problems they can solve a real challenge and acquire demanding professional competencies.
- For researchers, as will be mentoring a team to solve a real challenge with a certain novelty, minoring the gap between university-industry and/or society, and focusing on problem-based research.
- For citizens, as will contribute to solving a real challenge for the benefit of the community or third party.
- For local government, the activity contributes with resources, brings stakeholders together, and collects smart solutions for the benefit of the community.
- For industry, it addresses social responsibility through mentoring and solution guidance, opens access to talents, and contributes to minor the university-industry gap.

Participants in the first edition of this initiative, which ran two challenges, perceived it as a very enriching experience.

Lessons Learned

Assuming the complexity of the initiative, the pilots of the 1st edition of the "YUFE Challenge Teams" give some lessons:

- English is the common language of the initiative and the teams. Regardless of the benefit of this statement of ensuring the international dimension of the teams, in some areas, it might bring some difficulties to find non-academics mentors that can contribute in English.
- The wide spectrum of possibilities and characteristics of a challenge or problem that can be submitted is not limited in any way. However, not all are seen or understood as a challenge/venture from the beginning. In fact, there seems to be a trend to perceive social problems as less challenging or less entrepreneurial than the technical ones.
- The complexity of understanding and aligning all YUFE agents´ interests in the initiative is evident. Nevertheless, engagement pro bonus over a regular period or recurrent activities is difficult. New ways as a pool of mentors might be an alternative to be explored.
- Good practices standards to limited resources and lean procedures in order to avoid administrative burdens need to be established.
- It is necessary to harmonise the scheme with each YUFE university idiosyncrasy and ongoing activities.
- Local networking and dissemination are critical aspects for arising social challenges. This helps to strengthen the liaison with the institutions´ local ecosystems.
- Intellectual property needs to be addressed.
- The activity is very well perceived by the participants, in fact: multiculturalism, multidisciplinary, communication skills, and Agile approach are highly appreciated.
- As it is an extracurricular activity, the abandonment rate is high (50%).

Assuming the last two items, several alternatives must be explored such as i) shortening response periods, ii) adjusting the duration of the execution phase, and iii) considering this sort of methodology in curricular activities.

Conclusion and Future Outlook

"YUFE Challenge Teams" is an innovative methodology based on the active participation of the agents of the Quadruple Helix model. It provides a very intense and satisfactory experience for students and participants, thanks to:

- international and multicultural aspects through the YUFE dimension;
- multi-agent and multidisciplinary elements, mandatory in each challenge team; and
- Innovation and novelty being required in the solutions to the challenge.

The "YUFE Challenge Teams" is a successful problem-based learning initiative that needs minor adjustments and brings an opportunity to be integrated into YUFE curricular activities.

Additionally, the next steps are i) improve dissemination to increase the received challenges from different stakeholders, ii) multiply the numbers of teams executing each challenge, iii) make them structural at YUFE and partners level, and iv) explore to export or use the methodology in other local institutions.

STEAMhouse, Birmingham's Centre For Collaborative Innovation – From makerspace to thriving ecosystem

BCU has scaled up its creative makerspace to become a flagship centre for collaborative innovation.

Author: Patrick Bek

Region: Europe

Engagement models & structures driving innovation

Background and Objectives

The Government's UK Innovation Strategy outlined the need to nurture interactions between universities and business, as well as knowledge sharing, in order to drive innovation.

This role has been exemplified by Lord Karan Bilimoria, President of the Confederation of British Industry, who stated that "Universities have a key role within research, skills and innovation, which is going to drive the UK to build forward better". With this in mind, it is vital that universities embed innovation and entrepreneurship across teaching and learning, research, and enterprise activities.

Birmingham City University's mission is to be the University for Birmingham, with enterprise and innovation the oxygen of the institution. Central to this is their pioneering work in STEAM-based innovation – an interdisciplinary, cross-sector collaborative approach that combines STEM with Arts – which will shape, create and drive future talent and regional innovation.

By bringing together Arts and STEM disciplines, BCU is inspiring transdisciplinary research practice and new industry collaborations across zero-carbon, health and education. Furthermore, they are inspiring new pedagogic approaches, informed by international STEAM partnerships; underpinning the facilitation, problem framing, creative imagination and ideation skills needed for graduates and organisations in Industry 4.0.

Their flagship centre for collaborative innovation, STEAMhouse, is the embodiment of their STEAM agenda. Through its ecosystem approach, BCU is already helping to address the innovation deficit in the region as well as the growing number of skills gaps in key areas of the workforce, as highlighted in the UK Innovation Strategy.

Activities Undertaken

STEAMhouse Makerspace Demonstrator

In 2012 the Creative City Partnership identified that innovation in the West Midlands region was poor, and there was a lack of an ecosystem to support its development. As a result of the challenges, and the learning from a concurrent BCU cross-innovation project, the CCP recommended the requirement for a demand-led demonstrator within the region. Subsequently, in partnership with Eastside Projects, BCU conducted research to identify and analyse existing models of shared workspace for collaboration across industries. The research found that 47% of artists, designers, architects, makers and cultural producers in the region worked alone. And 55% could not access workshop facilities.

In response, STEAMhouse Phase 1 was conceived by BCU with support from ERDF, as an innovation demonstrator. Initially a 15,000 sq ft arts-led innovation facility which would show how creativity could be used to drive new kinds of collaborative products and services. STEAMhouse provided maker space for dedicated fabrication in wood, metal, print and digital.

STEAMhouse Scale Up

In May 2022, BCU launched the next phase of STEAMhouse. An investment by the university and Greater Birmingham & Solihull Local Enterprise Partnership that exemplifies their commitment to STEAM as a driver for student development and economic growth in the region. The new centre houses students and academics from their School of Computing, local start-ups, growing businesses, corporate companies, third sector organisations, artists, and collaborators from the public sector. Their original ERDF-funded STEAMhouse programme is now called 'Create' and forms part of a newly established portfolio of commercial products and services, and funded programmes that provide support to Innovate, Startup and Grow, Learn, and Experiment, as well as long and short-term space hire. The new building and its membership programme have been designed to make collaboration happen informed by a quadruple helix model of innovation.

Outcomes and Impact

BCU's STEAM approach received financial backing from HM Treasury and the Greater Birmingham and Solihull Enterprise Partnership. It has been flagged in the West Midlands Local Industrial Strategy, as well as being shortlisted for the Greater Birmingham Chamber of Commerce Awards.

Their new international STEAM Conference has brought together 300 delegates from 11 countries for knowledge exchange and interdisciplinary thinking.

On its journey from demonstrator to ecosystem, STEAMhouse, the physical manifestation of BCU's STEAM ethos, has so far provided 475 enterprises 7,500 hours of support. Early-stage businesses have received support to start-up and grow, mid-sized enterprises have developed business strategies and service design strategies that have enabled promising concepts to evolve into validated prototypes, with 126 new to market products created.

Over 200 enterprises were supported by the initial demonstrator programme, with a quarter of those being new enterprises and half of those supported have introduced new products or services as a result. Overall, the programme overachieved on its engagement targets and has shown to remove barriers to innovation by providing access to equipment and expertise.

The successful demonstrator delivery also attracted additional funding from Research England to deliver an equivalent demonstrator for start-up business incubation, STEAMhouse Incubator.

The industry insights garnered from the STEAMhouse demonstrator, alongside international STEAM focused research, combined with testing and engagement, have informed a new approach to pedagogy at BCU. Their STEAM vision has been underpinned by investment in their people, creating new STEAM PHDs, 13 STEAM fellows and engaging over 100 academics development.

Reflecting the international reach of STEAM through projects like STEAM INC and Urban M, BCU has now partnered with the BCM Foundation to establish the Munjal Birmingham University Centre of Innovation and Entrepreneurship (MBCIE) in Punjab, India. MBCIE will offer management and technical education based on the STEAM academic framework.

Lessons Learned

Lessons learned during the delivery of the STEAMhouse demonstrator have informed the design and development of the newly STEAMhouse centre.

The demonstrator had planned to attract larger businesses from the low carbon, health and manufacturing sectors, however, this did not occur to the level initially anticipated.

Phase 1 did not meet the demand from members for innovation support through digital means. The makerspace had limited digital making facilities with regards to virtual environments, digital circuitry and digital design.

There were communication challenges in marketing a project that is focused on integrating the Arts with STEM because of the breadth of subject areas and sectors involved. The marketing needed to talk to all and not act as a barrier.

There was a lack of business training in the visual arts and humanities courses, therefore prior to STEAMhouse, many artists did not have business plans and IP strategies in place.

STEAMhouse has shown the value of providing access to specialist equipment with specialist technician expertise and there is an ongoing need for fabrication space in the region.

A large proportion of makers in the region had never previously accessed business support. Maker space plus business support resulted in more financially viable businesses.

STEAMhouse has highlighted the importance of creating accessible maker spaces that promote informal opportunities for networking.

STEAMhouse has promoted opportunities for academic research collaborations and increased the accessibility of university support in the region.

@STEAMhouse

Conclusion and Future Outlook

BCU is an exemplar of STEAM, facilitating considerable levels of public and community engagement, enhancing their student experience, and strengthening knowledge exchange and knowledge generation to support growth.

Through STEAMhouse they are actively engaging with partners to drive innovation through their students, encouraging entrepreneurship as a key employment outcome.

They will fund a further 100 STEAM PhD scholarships to support the cross-disciplinary researchers of the future.

They will create the infrastructure to drive a robust revenue stream, realised by the academic community.

They will support and grow STEAM practice for all their communities to enhance the student experience, knowledge exchange and knowledge generation, cementing their distinct position with evidence.

Their STEAM ethos is backed by the UK Government, it has forged international collaborations and partnerships, has been cited as an exemplar in leading reports, produced successful innovative businesses, and is preparing students for the modern workplace.

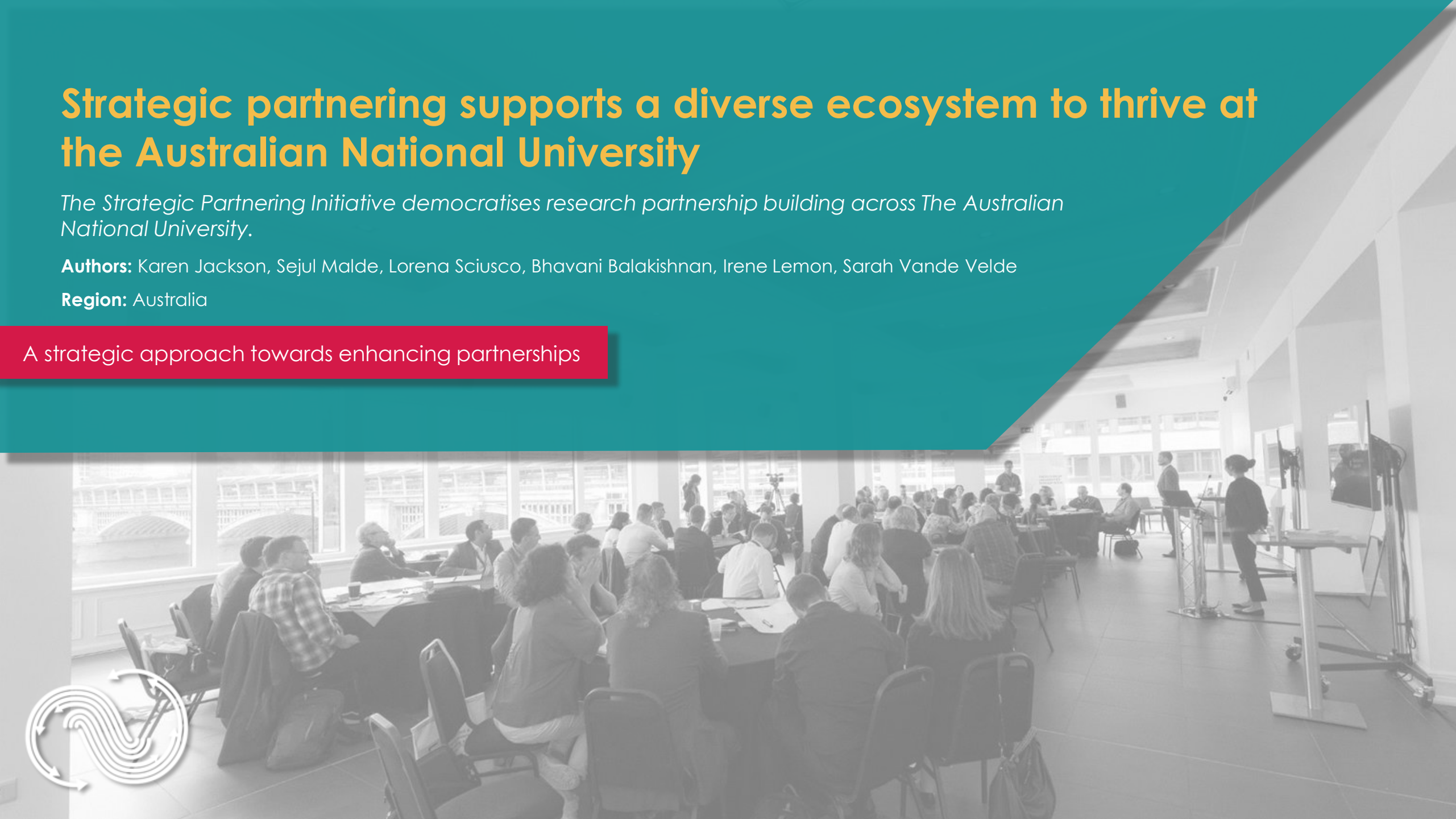
Strategic partnering supports a diverse ecosystem to thrive at the Australian National University

The Strategic Partnering Initiative democratises research partnership building across The Australian National University.

Authors: Karen Jackson, Sejul Malde, Lorena Sciusco, Bhavani Balakishnan, Irene Lemon, Sarah Vande Velde

Region: Australia

A strategic approach towards enhancing partnerships



Background and Objectives

BACKGROUND

While the Australian National University (ANU) has been building stronger and more successful approaches to driving external partnerships over many years, in 2021 the role of partnerships was elevated in ANU strategy as a key element for addressing near-term operational challenges from Covid-19, and more importantly contributing to the University's ongoing societal responsibility to Australia, the region and the world.

New leadership and support mechanisms included a dedicated University Partnerships team and a new University Business Development Team to be integrated across the University's seven discipline-based Colleges, and spoked into the Innovation portfolio hub.

The spotlight on partnerships created a unique opportunity to work collaboratively across the uncommon discipline mix of the ANU. ANU hosts nearly half of its staff in the Humanities, Arts and Social Science disciplines, a greater proportion than other universities in Australia's leading Group of Eight. Capturing and including this diversity alongside a Science, Technology, Engineering, Mathematics and Medicine-dominated and commercially-focused support structure provided a distinct opportunity to build stronger and more diverse partnerships aligned to the University's mission.

OBJECTIVES

In establishing a cross-university support structure in business development and partnering, there was a driver to:

- re-visit with academic leadership and hear from academic staff about their strategic drivers, operational needs, desired impact paths;
- gauge internal stakeholder alignment across these areas;
- evaluate how this was currently being reflected in service provided across discipline specific Colleges and cross-university support; and
- through establishing key criteria for strategic partnerships that spoke to these findings, use partnering as the means to drive a culture change that remained true to the University's core societal purpose and delivered value to our external stakeholders in government, business and the community.

This evolved into the Strategic Partnering Initiative (the Initiative): a platform for a stronger partnering ecosystem at ANU.

Activities Undertaken

A. Established the needs (Q4 2020)

ANU Innovation portfolio staff together with College business development staff met with ANU College Deans to baseline information about gaps in support to achieve ANU goals.

B. Mapped the initiative (Q1-Q2 2021)

A core team of representative ANU stakeholders (Initiative Team) started a formal analysis of ANU partnering through the pilot UIIN Strategic Partnerships Accelerator Program (UIIN Program). Under guided facilitation from UIIN, focus groups supported the development of a quantitative and qualitative survey, with subsequent workshops to examine the results. With contributions from approximately 125 people at ANU from the executive, academic and professional cohorts, staff defined a vision of partnering, a snapshot of the current state of partnerships, and a roadmap to the University's desired future.

The UIIN analysis identified key areas of success and for development, creating road stops to focus the Initiative Team's activities. Notably, these were not geared to the key criteria, cultural and operational paths for a "Strategic Partnership". Instead, the Initiative Team found that ANU would better meet its goals through supporting academic and professional staff to successfully "Strategically Partner".

C. Developed key mechanisms (Q3-Q4 2021)

The Strategic Partnering toolkit was developed in a series of live scenarios, modelling partnership between academic and professional staff and external partners.

The Partnership Manifesto (or what our partnerships are built on), was synthesised with the ANU Research Engagement and Business Development Community of Practice.

The Partnership Playbook (or how we undertake partnerships), was informed by material and approaches developed in a pilot program pairing 16 academics from the arts and social sciences, with 16 professional staff from across disciplines.

The Partnership Framework (or how our partnerships are structured), was refined examining the vision, governance, strategy, tactics, resourcing and evaluation of a range of existing ANU partnerships.

Outcomes and Impact

DELIVERABLES

From these activities, were delivered a set of simple criteria for successful Strategic Partnering:

- We know what we are looking for.
- We have a method of getting there.
- We know when we are getting it right.
- We share the journey and the results.

And tools to establish strong partnership foundations in service of this:

- Articulating the values and culture of partnering at ANU, to more easily attract potential partners aligned to our core purpose (Manifesto).
- Learning from the lived experience of academics through user journeys, to be better guided to develop a value proposition, identify partners suited to the desired impact, avoid common challenges, and model enablers in delivery (Playbook).
- Featuring a roadmap to support tactical conversations, to model manageable fit-for-purpose partnerships and reduce transaction costs (Framework).

OUTCOMES

In doing so, the Initiative is building trust and motivation for academic and professional staff by establishing and addressing their needs, and raising visibility of partnering journeys. Trials of tools have helped accelerate a diversity of models from different origin points with new partners.

We have also created measures of success for Strategic Partnering which speak to: the elevated role of partnerships in the ANU strategy; associated leadership and support mechanisms; the input of a broad range of internal stakeholders; and the experiences of external partners. Simply in the:

- short term (12 months): increase known partnerships at ANU that meet the criteria for successful Strategic Partnering;
- medium term (36 months): increase academic grown partnerships progressing to broad institutional partnerships;
- longer term (5 years): successfully initiate new network-or mission-based partnerships grown from a Strategic Partnering base.

This combination of trust, criteria, tools and targets build a strong foundation and culture for accelerating partnering success.

Lessons Learned

VISION

The Initiative Team started the UIIN Program thinking a clear route to institutional level partnerships on a financial growth path was desirable to ANU. The true picture was richer and more complex, with a stronger desire to collaborate intra-institutionally to develop networks of partners to solve sectoral problems or societal missions, supported by researcher led engagements positioned to grow. The Initiative was designed to embrace this, but not eschew financial gain, which remains a necessary factor in sustaining partnerships.

BARRIERS

The UIIN Program helped uncover barriers to partnering from the University:

- A lack of Visibility and Communication of partnering activity. ANU staff and prospective partners are not aware of our partnering capability so do not consider it an option, and success tends to be celebrated at a single initiating inflection point.
- The ANU Incentives and Rewards system is not optimally aligned to partnership success. Staff feel it does not recognise that the effort or skill applied to early stage relationship building; nor do the metrics for promotion easily reward successful partnership development and growth.
- Academic drivers are not often easily allied to those of research end users, and without support Cultural barriers are high. A siloed Support system exacerbates this by "burying" knowledge to guide partnerships within a cumbersome administrative system.

Making these barriers visible in the Strategic Partnering suite embeds consideration at a number of levels. Whether an academic embarking on a new project, a professional staff member supporting an activity, or a collaborative effort to create a new support program, we intend proponents to challenge the status quo and help clear these barriers.

To reinforce this discipline, the Strategic Partnering Initiative is developing a 5-year plan oriented towards goals for clearing each of these barriers.

Conclusion and Future Outlook

Throughout the design and development of the Strategic Partnering Initiative, the Initiative Team have identified the desired outcomes that our community of academics, partners, professional staff and the communities we serve care deeply about.

More than a static document, each mechanism of the Initiative is a living, iterative practice that guides and considers the needs of all stakeholders. In the next quarter the suite of tools will be finalised for launch.

Targeting a clearer path to use of University research, as transaction costs are reduced, and partnerships are more strategically aligned with goals of the academic, the University and the partner; the desired impact will be a recognised and valued uptake of research results across the diverse discipline base at ANU in a diverse range of sectors, generating societal and economic benefit.

We will continue to look for ways to share the journey and results.

Successful segmentation and partnership management with cross-unit CRM ecosystem

Framework on how to effectively leverage segmentation and develop a successful CRM culture and ecosystem.

Authors: Ville Krannila, Outi Toijala, Anne Kosola, Heikki Lahtinen

Region: Europe

Tools and instruments to drive and measure external engagement

Background and Objectives

Prior to establishing models for CRM ecosystem development and segmentation, there was increasingly overlapping work in creating, sustaining and developing partnerships and maintaining high-quality customer service. Many focused on strategic partners at the expense of identifying and developing new prospects. Also, the "everything-to-everyone" aspect in marketing and customer service rarely enables sustainable partnerships. Through the emphasis on data driven and strategy-based segmentation, joint processes and cross-unit agility was enabled. CRM also enhances synergy and openness, breaks silos, and streamlines processes. Segmentation is important for understanding the core demographics of a university's customer database.

When designing a partnership model and segmenting accordingly, the understanding of multi-layered relations in partnerships is strengthened, which creates a strong foothold for decision-making. In a collaboration framework with Aalto University, the objective was to scale up at a pace suitable for the partner utilising a CRM ecosystem and partnership management.

At Aalto University, we aim to form a cohesive picture of partnership via master data and centralised segmentation.

Successful Segmentation, And Partnership Management With Cross-unit CRM Ecosystem

Activities Undertaken

CRM Ecosystem development began with defining a higher mission and strategic targets for both processes, functions and system implementation. At this point, CRM business ownership and the CRM Team were already in place, and additional work was done by external consultants and system providers. A user-centric model was established through a service model, training and implementing a joint CRM Policy. Key Users were appointed from all major user groups. The CRM steering group was launched to align major issues regarding CRM development and priorities. First, segmentation criteria were built for major partners and Corporate Relations processes were implemented; these were then aligned with CRM master data management.

Outcomes and Impact

CRM impact can be seen in data-driven support to the University with analytics, high-quality data and digitalization.

The CRM is also enabling joint processes and cross-unit agility. The CRM culture brings forth synergy and openness to break silos. Data is being shared for common good of the partnership work, understanding of key segments is increased and partnership management agility developed. Internal overlapping work is being decreased and marketing efforts can be directed more effectively through segments. The centralised corporate relations team can form a cohesive picture of co-operation with major partners and has tools to support this work. With CRM master data and the ecosystem expanding, challenges are to keep master data in good quality and intact, retain a user-centric approach and build a joint CRM culture based on trust. Implementation projects can take a long time, depending on process amounts. A long term impact is more trustworthy data and high-quality analytics for management decision making.

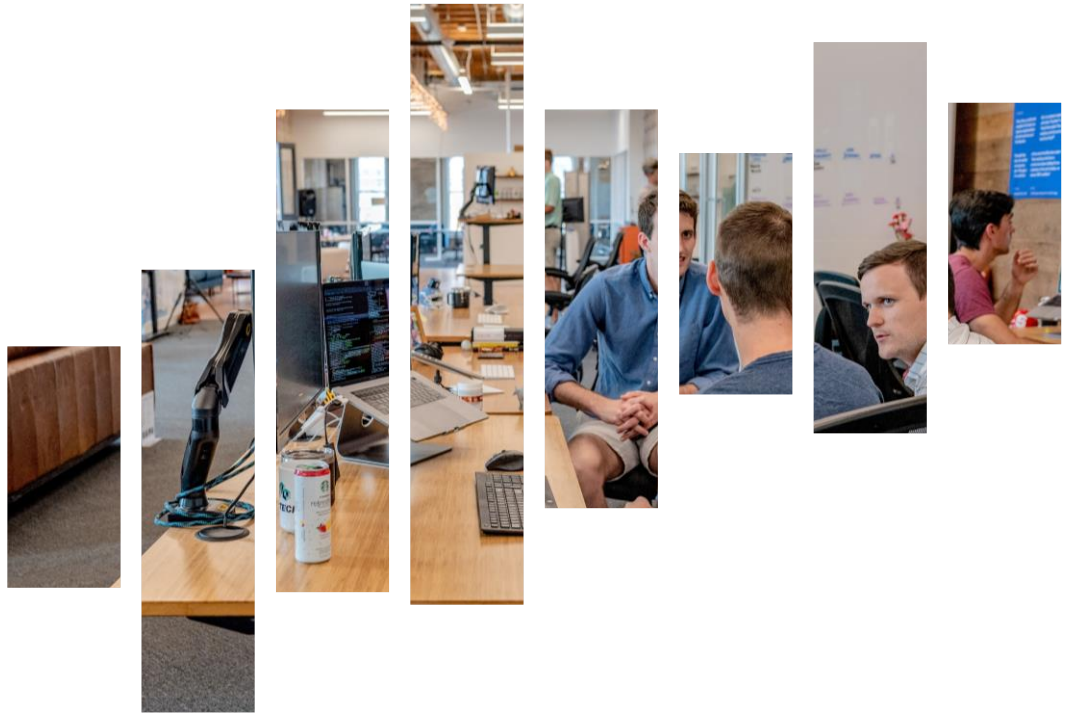
Lessons Learned

Developing a successful CRM and partnership management culture is always a challenge. Structural obstacles with non-centralized processes, dispersed data and IT system management, matrix responsibilities and lack of resources are the main issues still faced in many universities. The key is to define targets and business ownership, acquire management support and the needed resources, prioritise, and scale up in a controlled, steady pace. In the system framework, defining master data is the cornerstone of achieving results.

Success was reached through actions and deliverables in the fields mentioned above and successful use cases encourage new functions to participate. CRM is developed in a service model with attention given to user support, and a user-centric way of developing. Through extensive training and customisations, CRM is integrated into processes and vice versa.

Conclusion and Future Outlook

The point of CRM is not to arrive. Partnership and CRM ecosystems in university-industry collaboration are multi-layered and branch out, thus creating a long stream of functions to implement. This work continues to fully reach the key understanding of master data and partnerships. Master Data pathways need to be built across various systems and platforms to decrease process-heavy integrations, users will adapt to the CRM culture and sharing of data. Finally, data skills enhance and data will serve as an important weapon to reach new levels of co-operation and prospect realisation.



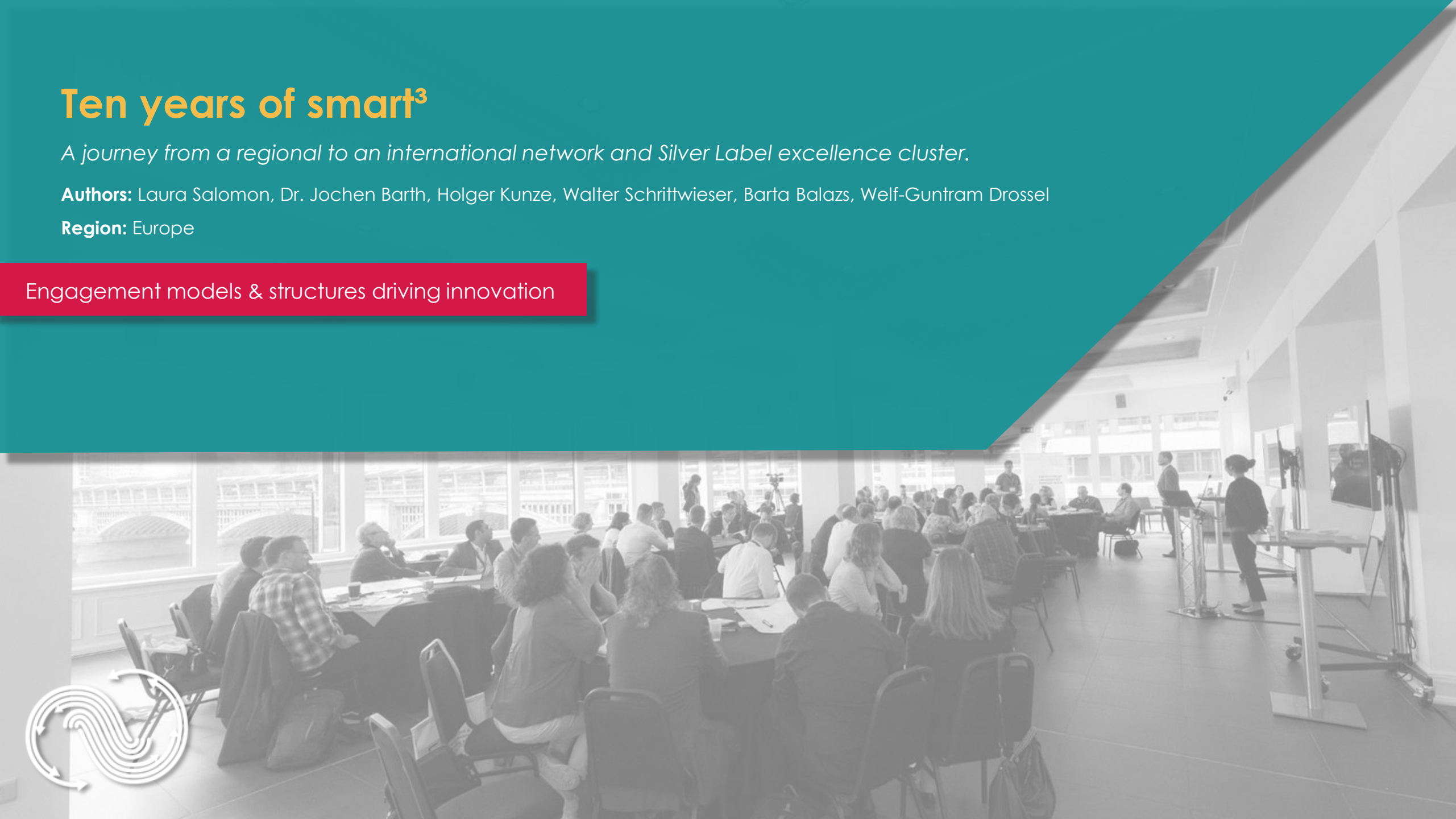
Ten years of smart³

A journey from a regional to an international network and Silver Label excellence cluster.

Authors: Laura Salomon, Dr. Jochen Barth, Holger Kunze, Walter Schrittwieser, Barta Balazs, Welf-Guntram Drossel

Region: Europe

Engagement models & structures driving innovation



Background and Objectives

Smart³ is a network initiative for smart materials innovation with a strong interdisciplinary approach. The primary focus of this contribution is on the development of the network, from a mainly regional, cross-disciplinary innovation network between universities, Fraunhofer-Institutes, SMEs, large enterprises and freelancers in Eastern Germany, to an international network with partners from all over Europe and a Silver Label excellence cluster.

Activities Undertaken

The smart³ initiative was initially founded as a highly interdisciplinary research network at a mainly regional level (East Germany). Engineers, entrepreneurs, natural and social scientists, and industrial designers came to together as an initial team of 31 partners, when winning a competition from the German Ministry of Education and Research receiving the necessary funds of 45 Mio. €. Smart³ is now in the successful final phase of the funding program and over 10 years it has grown into an innovation cluster with a Silver Label by the European Cluster Excellence Initiative (ECEI).

Since 2013, the network aims to establish strategic cooperation between research institutions and companies in order to create an innovation ecosystem in the field of smart materials. The properties of smart materials allow for an integration of functions directly into the material. With that it is possible to completely rethink product design. Therefore, the paradigm shift in the product also results in a paradigm shift in organisational arrangements and social contexts. Targeted public relations work was carried out nationally to a wide range of stakeholders, with the obtained research results and methods. Today, a large number of demonstrators are available that make the paradigmatic approach of using smart materials tangible and demonstrate future viability. A rolling exhibition, experiment station and smart materials meeting point, the mobile "NEUESwagen", started the first event participations in 2020 and presented the smart material innovations in regions beyond its hub in Dresden. Now the smart³ innovation network has over 120 members, of which 2/3 are SMEs. Over the last years it could evolve to become Europe's largest network on smart materials and thanks to the participation in EU-Interreg project in Central Europe (CE) more partners joined and broadened the horizons for innovation.

Outcomes and Impact

Even though the innovation network has its standing on national level, since 2017 the project team has increased exposure internationally, gradually establishing the position as Europe's largest smart materials network. To reach the goal of increased presence on the international realm, the cluster management team focused on two action areas:

- Get connected with other industry-driven international clusters and their actors.
- Become a certified and renowned cluster on EU-level.

How to bring plans into reality for smart³ - Activities and supportive structures

The international work from smart³ was started and the high potential of transnational cooperation opportunities managed by strategic partners like MIND CONSULT & RESEARCH GmbH (MCR), Austria. Basically, MCR have a methodological focus on brokering access to innovation, and are interested in facilitating access to knowledge across territorial borders. In particular, MCR contribute to an action-oriented roadmap with a high direct and strategic impact for the smart³ initiative. In doing so, MCR work with different organisations - from enterprises to government agencies, to create innovation corridors and ultimately connect complementary and synergetic value propositions. These processes facilitate the transfer of knowledge and sharing of experience, whilst expanding the territorial scope of involved parties. The networks are often activated using the tool of publicly-funded projects, as a technique of bringing together the value-added benefits in a transparent and commonly understood legal and financial framework. The smart³ network was/is/will be involved into 4 CE-Interreg Cooperation Projects like 3DCentral, S3HubsinCE, CEUP2030 and a new project proposal focused on Circular Economy and industry 5.0. Based on these projects strong cooperation with other regional clusters could be established, e.g. with Pannon Business Network (PBN) in Hungary or CiSMAT as an institute of the Carinthia University of Applied Sciences (CUAS) in Austria.

Lessons Learned

PBN is an internationally active, manufacturing-oriented business development organisation focusing on added value growth through digitalization. Its key customers are mid-caps aiming at process transformation, shifting from cheap labour manufacturer towards production centres of excellence. Activities are integrated with EIT Manufacturing, Teaching and Leaning Factory and doctoral school initiatives. They match perfectly with the smart³-network partners and focus on developing amongst others their smart material competencies in production and industry 4.0. Austrian CiSMAT recently joined the smart³ initiative and is the abbreviation of 'Carinthia Institute for Smart Materials'. It is a newly founded centre, dedicated to the research and development of innovative solutions based in smart materials and 3D printing.

To enhance exposure on an international scale, tangible quality schemes and support mechanisms should be in place, to facilitate recognition among new and potential network members and cooperation partners. Certifications are therefore the second important pillar for international growth. The European Secretariat for Cluster Analysis (ESCA) awards three different Quality Labels to qualified cluster management organisations through benchmarking and quality labelling of cluster management organisations worldwide. They coordinate and benchmark a network of around 200 cluster experts from more than 30 countries. Each cluster organisation was analyzed based on an interview of the cluster manager conducted by an impartial ESCA benchmarking expert. The interview covers 36 indicators with regard to the structure of the cluster, the cluster management and the governance of the cluster, financing of the cluster management, services provided by the cluster management, contacts and interaction within the cluster and achievements and recognition of the cluster. In 2018 the smart³ innovation network was successfully benchmarked by ESCA with the ECEI Bronze Label and achieved to upgrade to the ECEI Silver Label in 2021.

Conclusion and Future Outlook

The smart³ innovation network aims for achieving the ECEI Gold Label in the coming years. International expansion, an engaged member base, and attractive services should create tangible benefits for members. Next to stimulating collaboration between research and industry, the network will continue to provide participation in educational projects, joint presentation at trade fairs and symposia, access to a broad range of public relations, including its own 'Merlin' magazine, and new creative formats like an innovation battle.

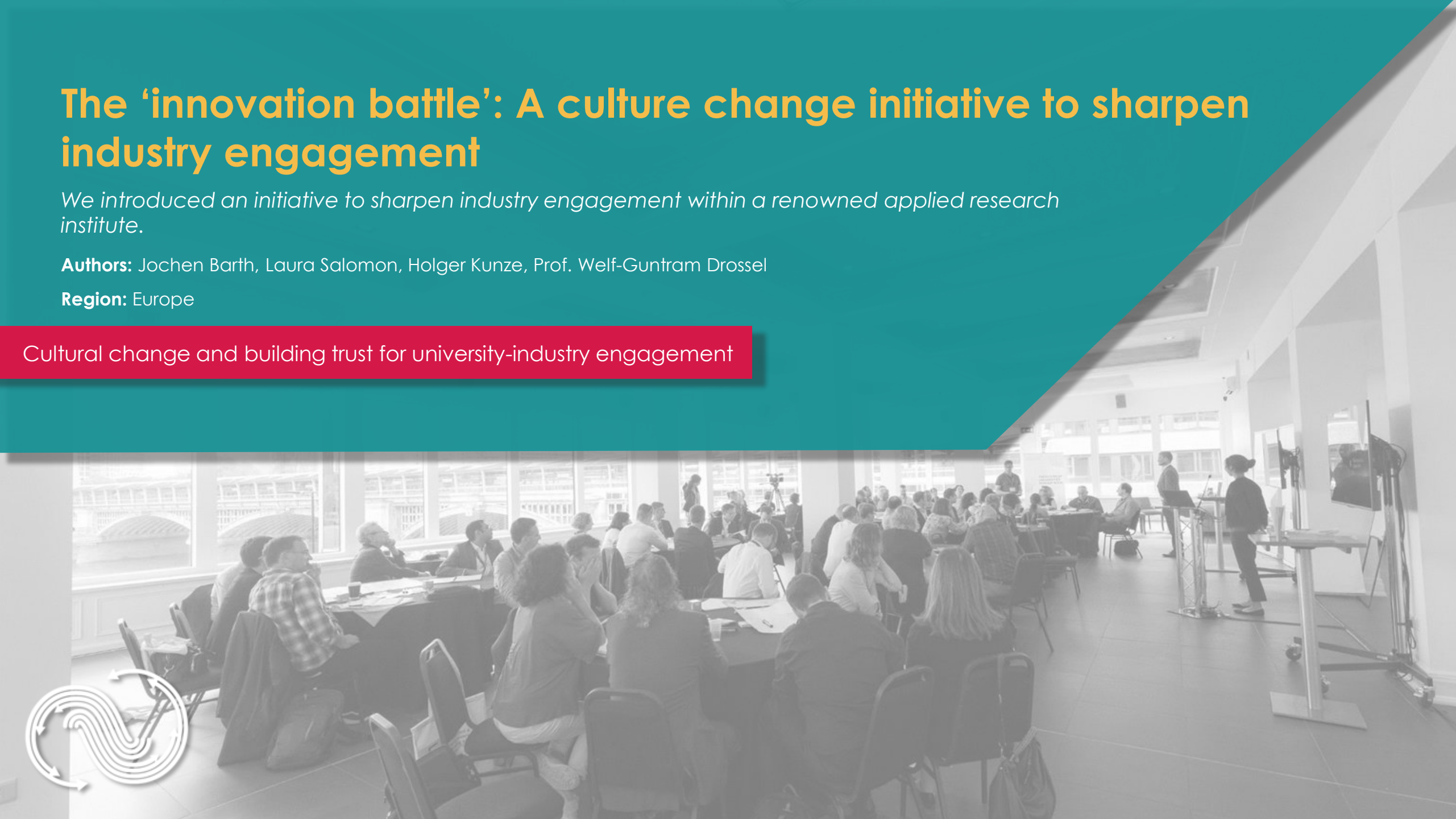
The ‘innovation battle’: A culture change initiative to sharpen industry engagement

We introduced an initiative to sharpen industry engagement within a renowned applied research institute.

Authors: Jochen Barth, Laura Salomon, Holger Kunze, Prof. Welf-Guntram Drossel

Region: Europe

Cultural change and building trust for university-industry engagement

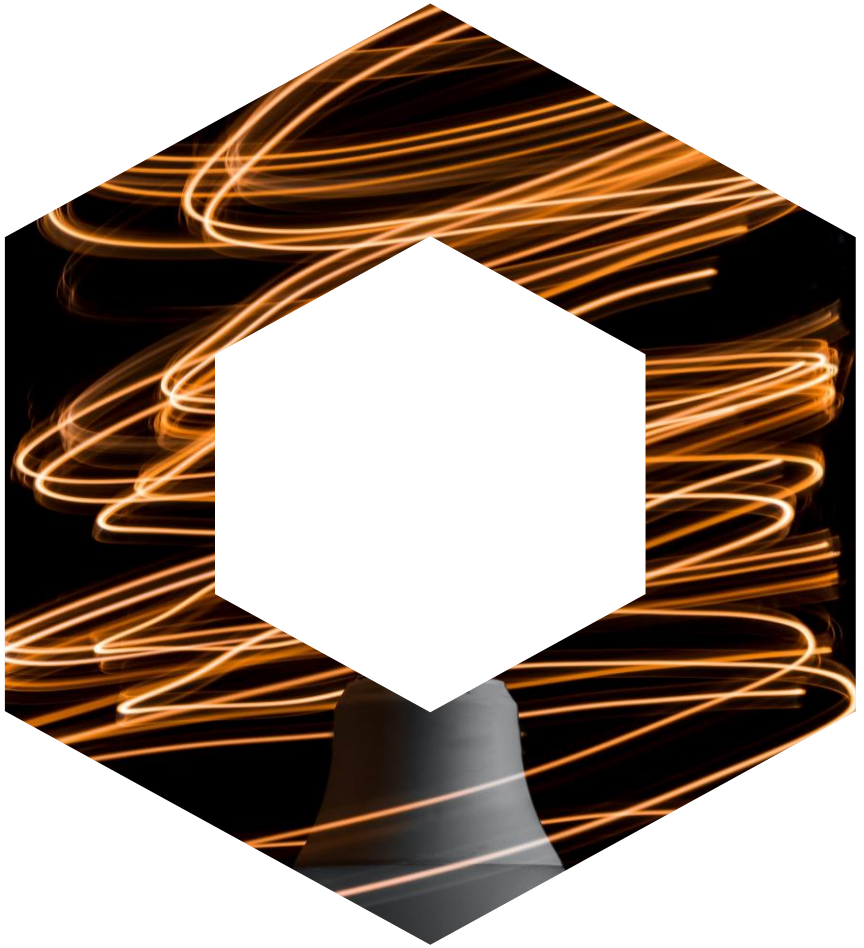


Background and Objectives

The way industry is pursuing innovation has changed in the past decade(s). Globalisation, exponential development of technology, climate change, an increasing need for resource efficiency, and a higher consumer sensitivity, are just a few of the factors that have contributed to industry becoming more goal-driven and less explorative when it comes to research and development. This development challenges applied research institutions like Fraunhofer to adapt their ways of addressing and serving industry. As companies are becoming less willing to invest into long-term research projects with insecure outcomes, research institutions need to acquire more short-term projects with a higher TRL. Explorative research, necessary to develop technology of interest to industry, is more often not externally funded, which forces research institutions to be more selective in which ideas to pursue and finance from basic funding. This requires a change of mind-set among researchers, often passionately dedicated to their technological inventions and personal interests. The complexity of research questions also requires a high diversity of competencies that are coming together to create synergies and deliver output that is attractive to invest in for industry clients. In this presentation, we will introduce an initiative we have developed and applied at our institute to initiate a change in addressing industry and working together between departments.

Activities Undertaken

We invited all research staff at our institute to submit ideas to the institute management to apply for basic funding; a budget reserved for new research projects that have so far no industry backing. Prior to the invitation, we conducted a series of interviews and workshops with all senior leaders of the institute and subsequently discussed the results with a group of employees who volunteered to join a mirror group to reflect on the input from senior leadership. In these sessions, we asked questions as what topics are particularly relevant for industry, which competencies at the institute are market leading, and how well people worked together to develop attractive offers for industry. From these interviews, it became clear that there was an unused potential for creating synergies between departments. In addition, we identified the need of breaking the habit of developing a solution and then approaching the market, rather than fully understanding the industry challenges and then developing solutions together with the market. Moreover, we concluded that it is crucial to better advertise the key competencies of the institute. All this led us to create the ‘innovation battle’ as an initiative to stimulate a cultural change in an engaging way. Instead of going through a long series of workshops, the ‘innovation battle’ allowed us to ‘practice’ a new way of thinking with concrete projects, working directly in the core business and close to the passion of the staff. To qualify for the ‘innovation battle’, staff needed to clearly identify and address a need in the market, form teams that included several disciples from several departments, and propose an idea of how they would communicate the chosen competencies effectively to industry. Once qualified for the ‘innovation battle’, teams had to pitch their idea to a jury that included representatives from industry,



Outcomes and Impact

Seven teams participated in the ‘innovation battle’ and competed for basic funding for their project ideas. In total about 40 researchers were involved and up to 80 people within the institute viewed the live stream of the pitches. Based on the votes of the jury, four teams qualified for funding. We invited the winning teams to submit a more detailed project proposal, including a budget specification, to institute management, which will then decide about allocation of the budget. When preparing their submissions for the ‘innovation battle’, employees remarked that they had not experienced so much exchange of ideas and collaboration across departments in recent years. Since this was a requirement for qualification, people were ‘forced’ to collaborate across departments and competencies but soon realised the benefits of doing so. In addition, inviting colleagues from business development and public relations into the jury, and giving them a role in the follow-up process, created a positive effect. The collaboration with crucial ‘outward-focused’ departments evolved early in the project, thereby avoiding the usual pitfall of inventing a new technology and only then talking to business development and public relations. Another important outcome of the initiative was an increase of perceived transparency about ideas and budget allocation. This not only made people more aware of ‘what everyone was doing’, but also, why some ideas are receiving funding and others do not. This also made employees more aware of the urgency and success factors of pursuing industry relevant innovations.

Lessons Learned

One of the primary challenges of the initiative was the complexity of the process. We provided detailed instructions and evaluation criteria when publishing the invitation to the ‘innovation battle’. However, as competition was rising, we received many questions, in particular regarding the available budget, the jury line-up, and the preferred way of presentation. As the initiative was a new process for all involved, we used feedback and questions, to adjust and improve the design and procedures during the process. We tried to be completely transparent and fair to all participants. If we received a question from a team, we would answer it and then share the answer with the other teams, so that all participants would have the same information. We also refused to specify how much budget was available, as we thought this would influence the proposals. Ideas with a highly promising ROI will always receive funding we communicated. This not only gave us an opportunity to emphasise the business thinking of ROI. It also allowed us to encourage entrepreneurship, framed as ‘the relentless pursuit of opportunities independent of the currently available resources’.

Conclusion and Future Outlook

We introduced an initiative to sharpen industry engagement within a renowned applied research institute. By clearly specifying criteria along industry relevance and collaboration within the institute, we not only identified and funded ideas with the highest industry potential. We created an opportunity for research staff to experience the benefits of a clear industry-focused approach and the benefits of working more closely together and creating synergies across departments. By the time of the conference, we will be able to share how the funded projects progressed and which additional lessons have evolved from that. As the initiative has led to so far positive effects, institute management is considering to make the ‘innovation battle’ a reoccurring event and expand it to more divisions of the institute.

The endgame for entrepreneurship: Leveraging capitalism for good

*Teach students how to solve **big** problems by leveraging capitalism.*

Authors: Joseph Steensma, Il Luscri

Region: North America

Entrepreneurial education and student entrepreneurship

Background and Objectives

Many young people see capitalism (and the tools employed therein) as the root of social inequities and environmental injustice. Because of this, many of the brightest and most conscientious young minds choose to avoid courses or educational opportunities in business in entrepreneurship, believing that participating in 'capitalist systems' only serves to exacerbate issues of inequity and environmental degradation. Paradoxically, the students who are most likely to avoid courses in entrepreneurship are the students who could leverage the entrepreneurial toolkit to have the greatest positive impact on issues that matter to them most. We set out to reframe 'capitalism', and 'entrepreneurship' in a course designed specifically for first-year university students who (1) cared deeply about social and environmental issues and (2) had a strong bias against capitalism, business, and entrepreneurship. Our primary objective was to recruit problem-solvers from all disciplines into 'entrepreneurship' so that they could develop the knowledge, skills, and abilities to operate within a capitalist system to solve big problems related to inequality and environmental degradation.

Activities Undertaken

Over the course of three years, the professorial team met with and interviewed students to understand the perceptions of young people who were disinclined to participate in entrepreneurism. Through this process, we gained clarity around why entrepreneurship was not appealing to these students and a deeper understanding of the issues and problems that mattered most to these types of students. Issues related to climate change, gender equity, educational opportunities, and environmental justice were common themes. Armed with this information, we set out to demonstrate how entrepreneurship, and in fact, capitalism writ large, could be leveraged to solve the problems these students cared about most. Using the United Nations Sustainable Development Goals (UN SDGs) as a framework, we developed a curriculum that introduces students to profitable companies that are having positive and measurable impacts in addressing the challenges they care about most. The course teaches students about sustainable development, the SDGs, capitalism, and entrepreneurship. Because the course is tailored to the 'first-year' student, we were able to have the course listed in the general education curriculum, allowing students from all schools within the university and all majors to take the course.

Outcomes and Impact

Students from over 60 majors have taken the course. The benefits have been widespread and meaningful: Students report having a greater confidence in the ability of capitalism and entrepreneurship to solve complex problems that they care about. Additionally, students report significant growth in their own ability to move from ideation to startup. In fact, students have continued to develop their projects from the course, and some have gone on to form companies and have received financial capital to develop their services and products. After completing the course, nearly 100% of students report having a more positive view of entrepreneurship in general and a greater belief in the ability of entrepreneurship to solve challenges related to the UN SDGs. The short-term impact of these shifts in perceptions may include more socially and environmentally aware students becoming engaged in entrepreneurship education and practice. The long-term benefits could be multi-fold. Hopefully, these scholars will have the confidence to leverage the incredible power of capitalism and entrepreneurship to impact their communities (and beyond) in a positive and sustainable way.

Lessons Learned

The primary challenge was developing a course that is able to hold the interest of people from all walks of life and who have varying interest. Furthermore, the course has to be exciting and fun; at the same time, it had to tackle some of the most difficult issues we face as a global society. Another challenge emerged around team projects and how to help teams work through the 'storming, forming, norming, and performing stages.

We developed additional course modules to help students understand the challenges of teamwork in an entrepreneurial context. Overall, we have learned that students greatly appreciate the opportunity to work on big challenges (e.g. climate change, gender equity, etc.) in a team- and project-based course.

Conclusion and Future Outlook

In the span of two years, this course has quickly become one of the most popular courses on our campus. Students who are generally left out of the traditional 'entrepreneurship educational opportunities are not just welcomed but instrumental to the success of the course. We set out to provide an educational opportunity for people who have increasingly abdicated their place at the 'entrepreneurship' table. The success of the course has exceeded our greatest expectations. Students report growth in understanding and ability with respect to entrepreneurship, but just as importantly, they report having a greater appreciation for the complexities that inform the problems they care most deeply about. A common comment on student evaluations is that the course is 'paradigm changing' for students. We believe this sort of educational opportunity will remain popular as more young people seek to disrupt the systems that have led to inequality, injustice, and environmental degradation.

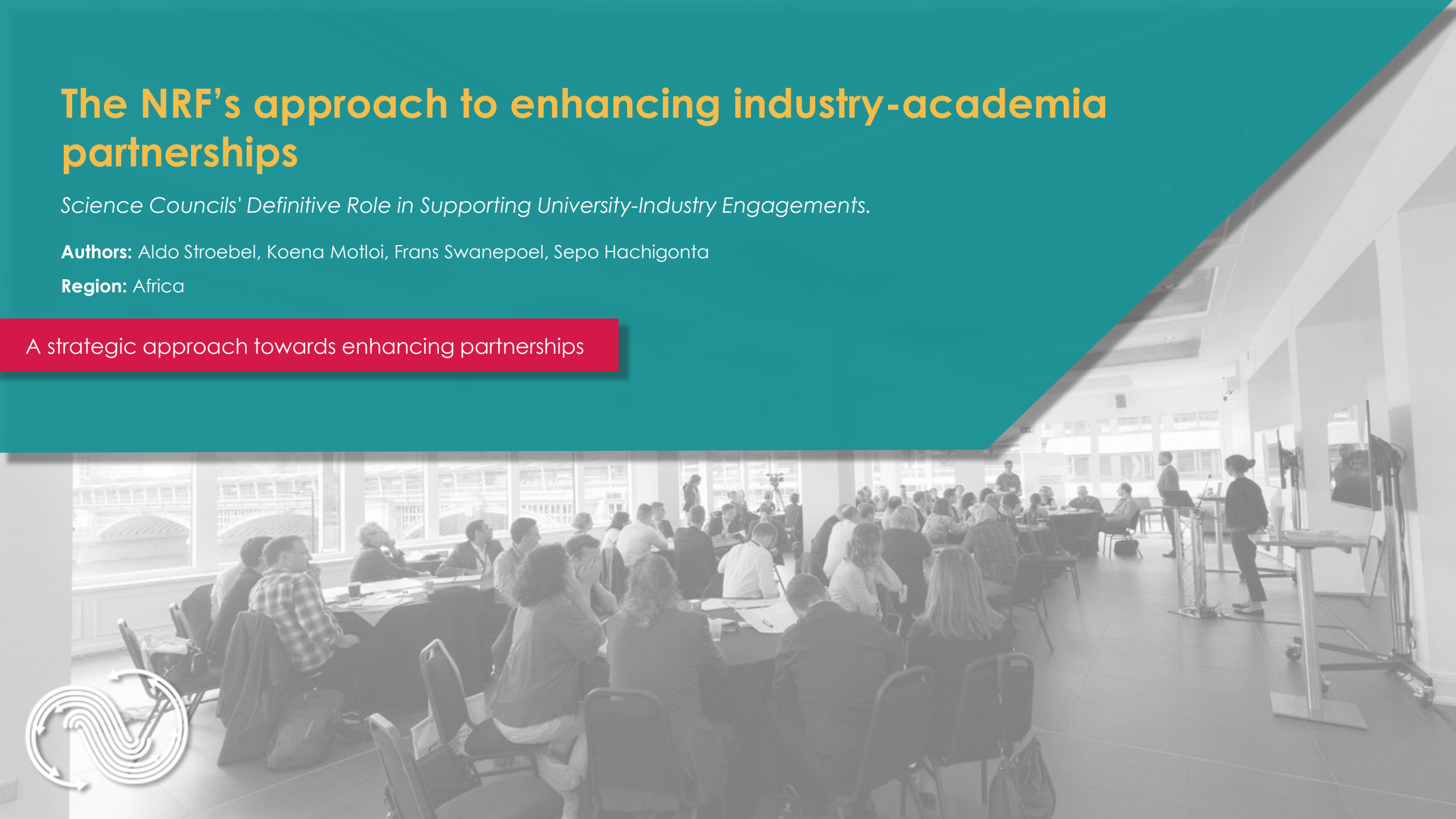
The NRF's approach to enhancing industry-academia partnerships

Science Councils' Definitive Role in Supporting University-Industry Engagements.

Authors: Aldo Stroebel, Koena Motloi, Frans Swanepoel, Sepo Hachigonta

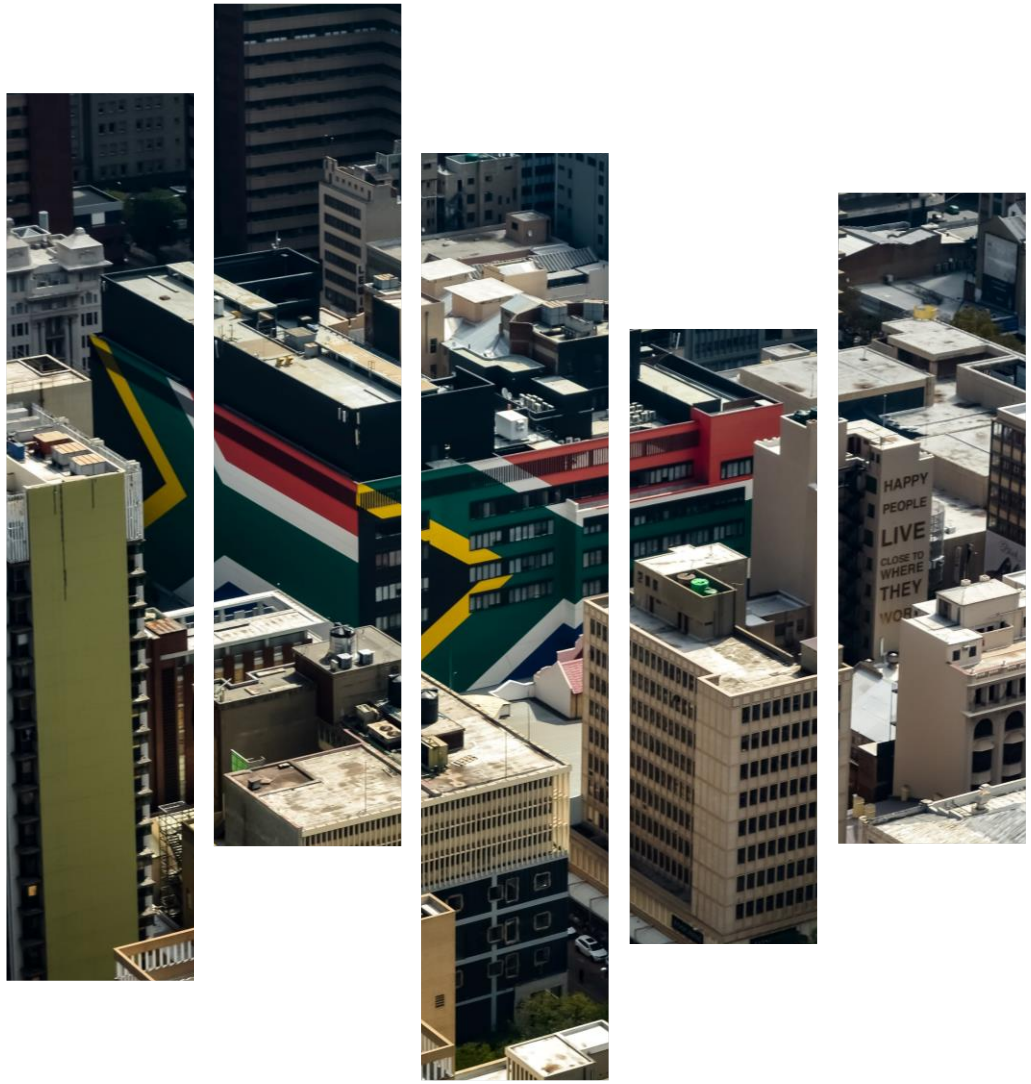
Region: Africa

A strategic approach towards enhancing partnerships



Background and Objectives

The National Research Foundation (NRF) of South Africa is implementing its Industry Partnership Strategy to guide and position the organisation as a science funder, to increase the flow of information, ideas, skills, knowledge and resources between academia and industry, resulting in increased knowledge co-creation, uptake and impact of funded research on societal challenges.



Activities Undertaken

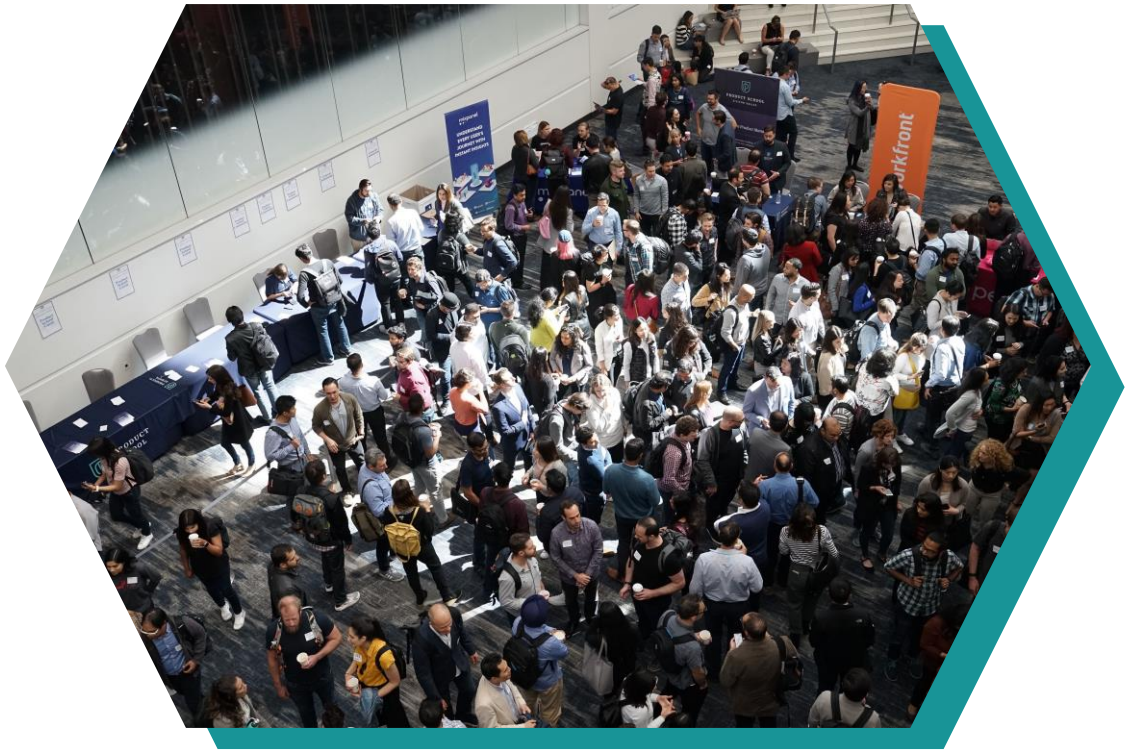
Science Granting Councils across the world have increasingly realised the need for robust collaboration with industry, as a result of a number of factors, including: limited public funding, demand for increased research impact on society, and demand for skilled human resources. In addition, the growing concern for sustainably addressing socio-economic and environmental challenges has resulted in the drive to develop challenge-based funding tools that require effective collaboration with key actors in national systems of innovation. For instance, the concept of the quadruple helix highlights that the potential for innovation and socio-economic development in a knowledge society lies in a more prominent interaction between the research performers (inter alia universities), industry, government and civil society. A critical factor of the Strategy is the development of skilled human capacity. Targeting new and re-purposing existing human capital development programmes that provide industry internship opportunities, the NRF is purposeful to (i) accelerating academic career pathways for early career researchers (ii) the production of a highly skilled workforce that is capable of transferring intellectual and technical expertise to industry, and vice versa, and (iii) the provision of supervisory capacity by industry experts.

Outcomes and Impact

Joint teams: Programmes that invite joint proposals from non-academic and academic partners, who work together to address an opportunity or challenge identified by the non-academic partner. Secondary outcomes accrue to the academic partners and others involved. All programmes involve collaboration with private sector companies.

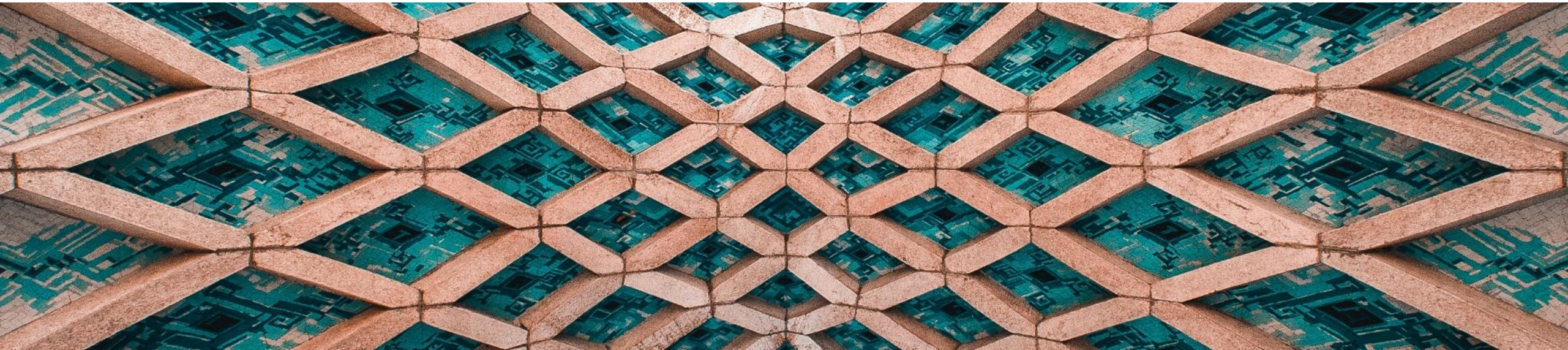
Exchange: Programmes invite non-academic partners to define the agenda. Academics and/or graduate students with relevant expertise join a project or are seconded to a non-academic organisation. Programmes invite academics to submit proposals, with the requirement or expectation that non-academic partners will support the project in some way. Projects are led by academics who transfer knowledge (social innovation) or commercialise research (private sector innovation). Projects have a specific use application. Non-academic partners provide advisory or technical support and/or take research outputs to scale.

Networks: Programmes support numerous organisations across different sectors. Several programmes involve non-academic partners from the private or productive sector and from the government and the non-profit sector. Diverse multisectoral engagement is a unique feature of the network model. Programmes identify specific beneficiaries but often have general aims. Positioning for use involves strengthening capacities/skills, support an economic or social sector, or build a platform for collaboration.



Lessons Learned

A significant example is the Department of Science and Innovation's TAX incentive programme to encourage investment in R&D, aligned with the NRF's activities. This provides a strategic mechanism for public and private companies to partner with academia. In addition, and for the first time in Africa, the NRF formally partners with the prominent Mitacs of Canada to advance South African and Canadian doctoral students and Postdoctoral Fellows in jointly-funded research and industry programmes through training, research and network opportunities. The activity plays a fundamental role in securing and leveraging additional resources for higher education institutions and National Research Facilities, and advances technology and innovation transfer.



Conclusion and Future Outlook

The NRF plays a central role to the country's National System of Innovation (NSI) and supports inter-sectoral collaborative research programmes to provide a platform for continuous interaction of academic researchers, students and staff with industry; ensure that the research outcomes remain relevant to the needs of industry; and promote the flow of knowledge between the academic and industrial sectors. These collaborative partnerships provide an opportunity to focus on impact-oriented research with a diverse scope and scale that role players within a system, including universities, would not be able to undertake on their own.

Unicorn Startup & Innovation Hub Graz - The active interface between university and regional stakeholders

Unicorn Startup & Innovation Hub Graz supports innovation in the triangle science, startups and corporates.

Author: Bernhard Weber

Region: Europe

Supporting mechanisms for entrepreneurship and research valorisation

Background and Objectives

The University of Graz started the Unicorn Startup & Innovation Hub as a vital interface between science, start-ups, and corporates. Located on the Campus of the University. It provides services and infrastructure for all those partners and brings the University closer to society. The main goal is to bring more entrepreneurial projects out of the university's activities and more connections from corporates to the campus.

Activities Undertaken

The first layer of activities happens directly on the campus. The main focus of these activities lies in the support of potential spin-off projects ("Spin-off Lab") and the support of innovation activities. There are also intensive activities in the field of entrepreneurship education done by the center for entrepreneurship, which is an important in-house cooperation partner.

The second Layer is the Infrastructure (3000 m²) for Startups, Corporates, Events, and Projects directly on the campus in the city of Graz.

The third layer is cooperation with different actors in the ecosystems with direct outputs into the start-up and spin-off activities:

- Cooperation with the Federation of Austrian Industries: Styria This includes regular start-up / corporate matching events with the goals of a better understanding of start-up activities in the regional corporate sector and more collaborations between Start-up and Industry. The second target of this collaboration are activities with students to identify talents via Hackathons and Talks and other interactive formats.
- Cooperation with the Austrian Economic Chamber Styria: This includes the access to the workshops (all kinds of Hardware and machinery) of the chamber which they operate for the training of apprentices for start-ups and students in the field of prototyping.
- Cooperation with UNI for LIFE (Lifelong Learning Department of the University): Together with UNI for LIFE, Unicorn developed a university course called "Digital Innovation Modelling" which is a hands-on innovation course for corporates where they work together with students on real innovation projects. This combines learning and developing.
- Cooperation with Gründungsgarage ("Founders Garage") an accelerator Program for early-stage student start-up projects.
- Cooperation with Ideentriebwerk: Graz Ideentriebwerk Graz is a student-led non-profit association with the goal of bringing more awareness to the startup ecosystem.

Outcomes and Impact

From the very beginning, the role of the Unicorn was: A Hub/ Connector for all the players in the ecosystem.

There are two sides of the impact the Unicorn has to fulfill. The first side is the impact on the campus of the university as part of the entrepreneurial university strategy. The other side is the impact on the general entrepreneurial ecosystem in the city and in the nearer region.

The Unicorn host some of the most innovative corporates in the region directly in the city center. So, for the first time, companies are located directly on the campus of the university and are integrated into several projects.

This is combined with a growing number of start-ups located in the hub. There they can find the first scale-up place after early incubation or acceleration programs.

Since also some of the most relevant support organisations for start-ups are located in the hub (Gründungsgarage, Social Business Hub Styria, "Ideentriebwerk Graz") a big share of all new start-up projects in the region of Graz are somehow connected to the Unicorn.

Furthermore, the hub is the host of regular innovation & start-up Events (Startup Playground, Startup Spritzer, Greentech Summerschool, etc). In total there were approximately 90 events hosted in the first year of 2021 (starting with the opening in April). Although there were many limitations because of the covid-situation the Hub managed to be recognised as one of the epicenters for start-up and innovation activities in Graz.

Lessons Learned

Challenge: Financial Resources

For the realisation of the infrastructure, there was the need for approximately 13 million euros. The key to getting the rectorate of the university on board was public funding from the regional government in combination with the European Union. This funding (5 million euros) was the trigger for the buy-in of the University. Nevertheless, there is also a constant need for covering operational costs for services Unicorn delivers for the university, although most of the costs can be covered by the income via renting out the office spaces and event spaces.

Challenge: Market vs. University

As a market-oriented organisation integrated into a traditional university organisation, the Unicorn is a subsidiary of the university and has the obligation to earn the investment back via renting out office spaces to start-ups and innovative organisations. That brings the need for very agile and flexible activities. That is sometimes a challenge for the University, but it also brings a new dynamic on the entrepreneurial campus.

Challenge: Non-technical University

The University of Graz is a general university with no technology focus and therefore no strong tradition of (tech-) start-ups and spin-offs. Success Factor: Very active and dedicated work (Uni Graz is the most active University in Graz when it comes to entrepreneurship) as well as strong collaboration with other universities and research organisations. And in the core is also to leverage the hidden potentials in all fields of science. Most of the challenges in society are in the need of solutions coming from the non-technology field but being solved by a technical product.

Conclusion and Future Outlook

Infrastructure like the one the Unicorn offers is a must-have element of a modern university campus.

It has internal effects on the entrepreneurial mindset of a university, and it connects academia and society. The baseline is a state-of-the-art infrastructure, which should be visible and accessible for everyone, not only for tenants and people from the university.

An open hub leads to an open mindset, which is key.

And there must be active involvement in the innovation ecosystem in the region.

Next steps:

- Stronger involvement of the own research community. In the first months, there was an easy and strong involvement of the Startup and Innovation Ecosystem. Its harder to involve the "in-house" community on the Campus and connect them stronger with the entrepreneurs and innovators.
- Higher frequency of hands-on innovation events (like Hackathons) to mix all players in the triangle science-startup-corporates.

University-industry partnership: The case of ASELSAN Academy

A novel graduate education model, where industrial facility serves as external campus of four universities.

Author: Prof. Mehmet Çelik

Region: Asia

Developing and nurturing strategic partnerships

Background and Objectives

ASELSAN Academy, as the Graduate Education Program of ASELSAN, is a stakeholder to four prominent research universities (Gazi University, Gebze Technical University, Istanbul Technical University, Middle East Technical University) under the auspices of the Council of Higher Education of Turkiye. ASELSAN Academy Program has been providing ASELSAN employees the opportunity to receive graduate and doctorate education without leaving ASELSAN campuses. Electronic Engineering, Computer Engineering, Mechanical Engineering and Materials Engineering departments of these four universities are included in the program, and these departments are the main focus of ASELSAN's activities.

ASELSAN Academy is a singular entity that encompasses numerous graduate programs of the four partner universities. All processes of the program, starting from the application phase and going all the way to graduation, are managed through a centralised unit within ASELSAN, namely ASELSAN Academy Directorate. The program has its own student information software (SIS) that manages the students registered to all four universities and the courses of the program.

The main objective of ASELSAN Academy is enabling sustainable collaboration with partnering universities and supporting co-creation through various mechanisms. The graduates from ASELSAN Academy Program receive their diplomas from the partner universities, therefore the curriculum meets the requirements of each university.

The program started in the 2017-2018 Fall Term with 90 students (22 doctoral) and reached 703 students (96 doctoral) in addition to 91 graduates, by January 2022. The number of courses increased four times from 25 to 100 in the same period.

A team of 25 people carries out ASELSAN Academy processes, 11 with a Ph.D. degree, 7 studying towards master's and Ph.D. degrees.

Activities Undertaken

The program aims to align the students' research with their projects within the company. This way, the success rate and impact of the theses can be maximised. In the application phase, the students, with the consent of both their advisors, propose their thesis topics on either improving or solving a current need in the ongoing projects or meeting the long-term technologic development plans under the guidance of their superiors.

There is a single pool of courses in which all the universities and the Ph.D. degree lecturers within the company contribute, and the students can register for any course in that pool. Considering time efficiency, all the courses are given on the company campus, where an online option was added during the pandemic.

ASELSAN Academy works hard towards engaging experienced workers of the company with the thesis studies. When convenient, students are co-advised by personnel within the company who have a Ph.D. in a relevant field. Therefore, the progress of the research can be guided both by the university and the company.

The Technology Mentors of the company, who have 10+ years of experience, also assist the ongoing thesis studies and offer new topics for future theses. Two other mentors, one specialised in the graduate education process, and the other in academic research, maximise the impact and the output of students' graduate education by guiding them whichever way necessary.

ASELSAN Academy program organises workshops every year with its partner universities. In addition, technology workshops are regularly organised with other research universities. ASELSAN engineers and relevant academicians exchange ideas on focal issues during the workshops.

The academicians, the students, and the company principals are gathered through thesis monitoring meetings, academic talks, and presentations. Those are essential for blending the company and the universities and supporting co-creation.

Outcomes and Impact

The collaboration between university and industry has been moved to a new dimension within the scope of ASELSAN Academy. An open innovation environment has been created by providing access to ASELSAN laboratories and facilities for universities and using the knowledge and opportunities of universities. The Academy contributes to the increase of information sharing and communication between company departments by disseminating academic studies in focused meetings, student presentations, and workshops. The outcomes of academic studies by means of scientific papers and applications for patents are increased via the activities performed by ASELSAN Academy. The total number of publications is 93 by December 2021. 61 Of them were presented in conferences, 10 were published in scientific journals. In addition, 14 journal papers have been submitted and 8 patent applications have been filed.

Academic and technological mentorships help to find the best academician-thesis subject-project match, which helps ending up with a product or key know-how to fulfill the needs of the company.

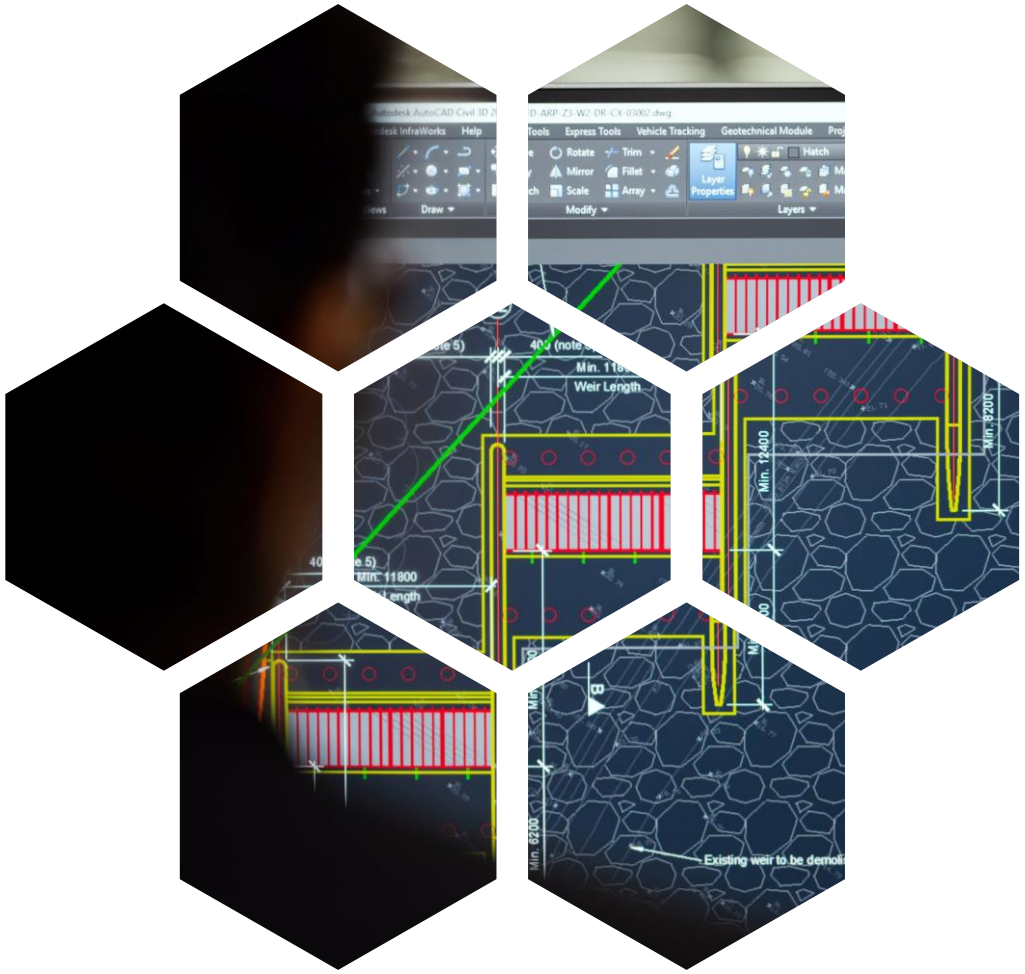
Currently, ASELSAN Academy has 703 students and 91 alumni. 158 academicians from partner universities have taught courses, and 162 academicians have advised student theses until recently. The total number of courses given in ASELSAN Academy is 597 by December 2021.

Lessons Learned

Several difficulties were experienced during ASELSAN Academy program. One of the main challenges was the multi-stakeholder educational system. Universities are autonomous institutions, and their senate decisions may vary in different situations. Hence, it becomes hard to align the partner universities under the same circumstances. The synchronisation problem could be solved through regulations specific to universities.

Another difficulty faced in the early years of ASELSAN Academy program was maintaining course variety. Since the number of students enrolled in the program was limited at the beginning, it was hard to offer a high variety and high number of courses. With the rising number of students, the variety of courses has increased over time and the number of courses reached 100 in the 2021-2022 Fall semester.

The last challenge is the variety in operations carried out by the ASELSAN Academy Directorate. Mentorships, meetings within the company, meetings with academia, regular academic workshops and planning the courses to be offered at each semester requires the academy staff to be versatile and experienced both in academia and within the company. By expanding the workforce, this challenge has been alleviated.



Conclusion and Future Outlook

In this study, we proposed a novel model that aims to conduct a graduate education program specific to ASELSAN employees, which creates technological value for the company. Courses and graduate theses are shaped according to the strategic goals of the company.

As an outcome of this program, the number of employees attending graduate education and the number of thesis studies towards the interests of the company has increased. With this model, we observed a significant contribution in strengthening ASELSAN's research infrastructure and know-how. Furthermore, workforce gain was ensured as the courses were taught in ASELSAN campuses.

As a future outlook, including more stakeholders from industry and academia can be considered. This way, the transformation of the thesis outputs into products can be accelerated.

The contribution of experts and academicians other than member stakeholders can also be considered as a future study. Increasing course portfolios with disruptive and up-to-date international courses

US Startup Mentor Training Series

Mentors are an important element of startup success, however, mentors themselves are an underserved community.

Authors: Andrea Kozma, Nora Wagner-Varady

Region: Europe

Supporting entrepreneurs through mentorship and education

Background and Objectives

CEU InnovationsLab is the business incubator/accelerator of Central European University.

It started in 2016 and to date incubated 85 startup teams. CEU iLab runs a semi-structured accelerator program which takes on two cohorts of 10-15 startup teams a year in its 6-months long program.

The program has been continuously evolving since its inception, as it has grown from an experiment to a fully blown accelerator program, receiving the "Best Incubator in Hungary" title at the CESA Award in 2017.

The main challenges have been to tailor an accelerator program that responds to the specific needs and wants of the startups in the Hungarian ecosystem, which is characterized by a high level of state intervention and a low level of social status of entrepreneurs.

The program has been successful to activate the extensive alumni network of the university and additional corporate network to engage with the program as mentors and with their help changed the initially quarterly mentor review process to a bi-weekly/monthly dedicated mentor relationship. In this process, however, iLab has learned that mentor-mentee relationship is a complex one. While the mentors have all been highly educated and experienced executives or entrepreneurs, providing constructive feedback and steering the founders to success had its own challenges. The iLab director realized that iLab staff engagement was necessary in the mentor-mentee process and created a triangle of founders-mentor-iLab staff engagement for each team throughout the program. This 3-party engagement provided a unique insight in the mentoring process, allowing the iLab staff to observe the process and act upon the learnings.

It has become apparent that mentors too require additional support to feel comfortable and confident in their roles at the mentor sessions.

iLab also has realized that it needed to keep up with the increased number of startup applications with an increased number of mentors. It also has become necessary to profile the mentors according to their expertise, personalities, specific interest and motivation. Mentor burn-out was experienced with mentors who engaged with multiple teams for an extended period of time, and it became apparent, that iLab needed to rotate mentors in each cohort, to keep mentor motivation and the reverse-mentoring value of the process at a high level.

iLab introduced parallel mentor campaigns with startup cohort onboarding and introduced, mentor selection and onboarding process.

Background and Objectives

It also has transpired that the role of a "coach", a "consultant" and the "mentor" has been blurred and some mentor applicants perceived the mentoring opportunity to provide paid consultancy. It was time for iLab to "clear the air" and create a mentor standard of behaviour and open up an ecosystem-wide discussion about the role and motivation of a startup mentor.

In 2021, in cooperation with the US Embassy in Budapest, iLab has created a 5-session lecture series entitled the US Mentor training program, with the aim to bring leading actors of the US startup ecosystem and academia to discuss and share US mentor practices with mentors active in the Hungarian startup ecosystem.

The session stretched from May 2021 to November 2021 and there have been online or hybrid sessions.

The sessions were free of charge and were open to all interested participants.

iLab set the following goals with the program:

- Engage and activate at least 100 new mentors in the ecosystem.
- Set a mentor behaviour standard by jointly creating a Mentor Manifesto which the participants agree to adhere.
- Create an outlet for active mentors to share mentor experience, exchange ideas.
- Create a wider mentor network which continues to interact beyond the Mentor training program and gathers on a regular basis.
- To create "mentor ambassadors" to increase the involvement of additional, highly qualified and highly motivated mentors.
- Provide and endorsement via the "Certified iLab mentor badge" of those mentors who participated in each sessions. It was possible to view missed sessions as the sessions were all recorded.

Activities Undertaken

During the project, altogether five sessions were carried out.

All sessions involved one or more speakers from the US startup ecosystem, talking to an audience of startup mentors about different aspects of mentoring. The speakers participated online to a live audience and presentations were followed by lively Q&A sessions. Each sessions were followed by a networking and community event to provide opportunity for participants to meet, network and exchange practices and create an active community of mentors.

The topics of the five sessions were the following:

1. **The Challenges of Working with Startups (Nathan Furr - INSEAD)**

The session explored in an interactive format the differences between the entrepreneurial and the corporate management and mindset. Through practical activities participants understood how to build bridges between their experience and startups.

2. **Best Practices from the US (John Hill - Techstars, Katja Wald - MIT)**

During this session experts from two of the most well-known US accelerator programs walked participants through their best practices of startup mentoring. The session was followed by

3. **Creating Opportunities for Startups to Build Powerful Businesses (Patrick Riley - GAN)**

What kind of support do startups need the most? How to help them access the human and financial capital they need to build powerful businesses and to make a meaningful impact? What does the data from 100 global accelerators and 12.000 mentors say about how mentors can do their job most efficiently? These are questions Patrick answered in his talk based on his extensive experience working with 1000 incubators worldwide.

4. **Behavioural Aspects of Entrepreneurship (Marisa Peer - globally acclaimed therapist)**

The talk was about how to bring down limiting self-beliefs and get rid of impostor syndrome which very often stands in the way of entrepreneurs to realize their business potential.

5. **Disciplined Entrepreneurship – Creating More and Better Entrepreneurs (Bill Aulet - MIT)**

In this session, Bill Aulet shared his personal mentoring experience with the audience and discussed good and bad mentoring practices.

Outcomes and Impact

The aim of the Training for Startup Mentors – Best Practices from the USA program was to showcase best practices in startup mentoring from the US in order to enable startup mentors in the CEE region to work more efficiently with startup founders.

Key results

During its course, the program has achieved the following key results:

- A database of 300 startup mentors was built.
- A community of 100 startup mentors was created.
- A Mentor Manifesto was co-created by program participants.
- 100 mentors were equipped with tools, know-how and methods to guide startup teams towards sustainable growth. This outcome multiplies the program results and serves to create a wider economic and social value.

Lessons Learned

This program was a one-of-its-kind. Accelerators do not engage mentors in similar programs and our guest speakers highly endorsed the innovative program idea and format. This was most probably part of our success to secure highly sought-after speakers.

Mentors are an important element of startup success, however, mentors themselves are an underserved community within the ecosystem. People are not inborn mentors, and they do need training to do well both in terms of content and framework.

Conclusion and Future Outlook

Startup mentors require and highly appreciate tailoured mentor training and networking opportunities. The program received very positive feedback and participants requested a continuation of the program.

CEU iLab is currently investigating the possibilities to extend the program beyond its borders and serve a wider community of the European startup ecosystem.

Possible avenues are making the program available for wider European startup mentor audiences as well as involving speakers from all significant startup ecosystems. A European startup mentor certification system could also be built into the program.

Additionally, a pan-European, searchable, digital mentor exchange platform could be created to mentor startups from different geographies.

Using a collaborative network to boost local entrepreneurs in their local communities

How the WiSys VentureHome® initiative is organizing regional economic development ecosystems and supercharging state-level growth.

Authors: Arjun Sanga, David Brukardt, James Schmidt

Region: North America

Engagement models & structures driving innovation

Background and Objectives

WiSys is spearheading an ambitious network of startup hubs to enhance economic growth across the U.S. state of Wisconsin—supporting local entrepreneurs and their scalable new businesses in their local communities—and helping remove location as a stumbling block to success.

This initiative, known as WiSys VentureHome®, creates opportunity by:

- streamlining access to existing statewide and local resources for entrepreneurs;
- creating new programming and services to address local economic development needs;
- mentoring and nurturing budding entrepreneurs along their startup journey; and
- formalising connections between state leaders, universities and local entrepreneurship communities.

The startup hubs, known as WiSys VentureHomes®, are being installed across a wide geographic area in Wisconsin's small-to-medium communities that host regional University of Wisconsin System institutions. Each hub is a collaboration between the university, a community partner and WiSys, which are further connected to the statewide network of WiSys VentureHomes®. This ensures broad reach of support for cities that can be overlooked when resources are concentrated in the state's major metropolitan areas.

The initiative is another way WiSys inspires innovation and entrepreneurship in these regional communities across Wisconsin, where it has been working for more than two decades supporting the University of Wisconsin System's regional comprehensive and primarily undergraduate institutions: UW-Eau Claire, UW-Green Bay, UW-La Crosse, UW Oshkosh, UW-Parkside, UW-Platteville, UW-River Falls, UW-Stevens Point, UW-Stout, UW-Superior, and UW-Whitewater.

WiSys launched in 2000 when University of Wisconsin System leaders recognized the need for an organisation to champion the innovation and technology transfer needs of all the other the system's schools beyond its large flagship institution UW-Madison. WiSys' ethos is that good ideas can come from anywhere.

The WiSys VentureHome® initiative levels the playing field for more innovators and entrepreneurs working in regional communities.

Activities Undertaken

Working closely with UW-Eau Claire, WiSys hatched the idea for WiSys VentureHome® in the city of Eau Claire—Wisconsin's eighth largest city with 69,000 people. Leaders from both organisations saw a need for a collaborative local, regional and state effort to support entrepreneurs in their home community.

WiSys then partnered with leaders at the local coworking space CoLab, a convenient and engaging location, to serve as the community partner. Both CoLab and UW-Eau Claire agreed to provide on-the-ground staffing. With a founding team in place, the first WiSys VentureHome® launched in February 2020 with the goal to be "everything your startup needs under one roof.™"

The hub offers:

- **Concierge service.** Since each startup is different, there is no one pathway to success. WiSys VentureHome® partners guide entrepreneurs to find the right resources to meet unique needs.
- **Mentorship program.** A free, five-month mentorship program called "Level Up!" helps entrepreneurs with a scalable business or idea reach the next level by focusing on achieving tangible milestones and traction. Understanding that entrepreneurs join the program with different levels of expertise, this program provides a tailored experience to the participants.
- **Networking.** Recognizing that starting a business can be a lonely and isolating endeavor, entrepreneurs can connect with each other and to local and statewide mentors through personal meetings or entrepreneurship events.
- **A portfolio of technologies and ideas.** Combining the technology portfolios of each of the state's three technology transfer offices (WiSys, UWM Research Foundation and the Wisconsin Alumni Research Foundation) entrepreneurs can look for their next big idea among thousands of patented technologies ripe for commercialisation.
- **Entrepreneur toolkits.** By accessing established learning materials on business functions, such as accounting or creating pitches, entrepreneurs can streamline their efforts.

Outcomes and Impact

After a successful launch in Eau Claire, other communities recognised the initiative's value. WiSys, working with UW-Green Bay and the Greater Green Bay Chamber, launched the second WiSys VentureHome® in Green Bay—a community of about 105,000 people in Northeast Wisconsin—in late 2021.

Several other hubs are in development in other target communities. The model has proven to be a popular rallying cause for local economic development leaders. Although the primary mission is to serve startups, an important byproduct of the initiative has given local communities the impetus and drive to organise and evolve together to better serve local entrepreneurs.

In Superior, one of the state's northernmost communities of about 26,000 people, local leaders are using the effort to bring a WiSys VentureHome® to its downtown as an opportunity to organize its local economic development efforts.

City leaders plan to renovate an old post office to house the startup hub alongside other local economic development entities to allow greater collaboration. "We already have a great team of advocates for business, existing and new, but putting them in one space that's accessible and known to the public helps make sure that nobody gets left behind," Superior Mayor Jim Paine told a local television station.

As for local entrepreneurs, hundreds have already been referred to local, regional and state programs for assistance through WiSys VentureHome®. So far, the leaders of 18 startups have graduated from the mentorship program. Upon graduation, these entrepreneurs pitched their plans to a pool of statewide investors, industry leaders, and media through a pitch event. This allowed these entrepreneurs in less visible communities to garner even more attention for their startups.

Four of the mentored companies have received seed funding. Others have launched new companies/products, conducted pilots and beta tests, or found mentors and co-founders to advance their ideas.

Lessons Learned

The primary challenge for the initiative, and each new WiSys VentureHome®, is local engagement. Without local buy-in, support and sustained effort, the startup hubs would not be successful.

The effort cannot, therefore, be top-down from the state-level. While WiSys provides the framework and kickstart, local leaders need to take the lead. Finding a galvanising voice from an influential community leader is very helpful.

In Eau Claire, that voice was UW-Eau Claire Chancellor Dr. James C. Schmidt. Chancellor Schmidt's visible support and involvement brought many stakeholders to the table and provided a helpful push to get started.

To further ensure successful adoption, the taking of ownership and the cultivation of sustainable roots, WiSys takes an individualised, adaptable and collaborative approach to build each WiSys VentureHome®. Although the mission and vision remain the same, each WiSys VentureHome® blends into the local culture and addresses community-specific needs and opportunities.

The development of each new WiSys VentureHome® is led by a steering committee of interested and motivated local leaders. These leaders provide invaluable credibility, direction and insight.

Engaging state-level leaders to invest and support these local leaders and local efforts has also been a critical success factor. These connections help WiSys grow the utilisation of state level resources in underserved local communities.

One example of this is WiSys' partnership with Wisconsin venture capitalist Richelle Martin, who serves as the Venture Capitalist-In-Residence for WiSys VentureHome®. Martin is the managing director of the Winnow Fund, a venture capital fund focused on investing in Wisconsin-based seed-stage companies. By working together, WISys is able to bring Martin's expertise and experience as an investor to WiSys VentureHome® users who may not yet fully understand that perspective and why it matters to their startup effort.

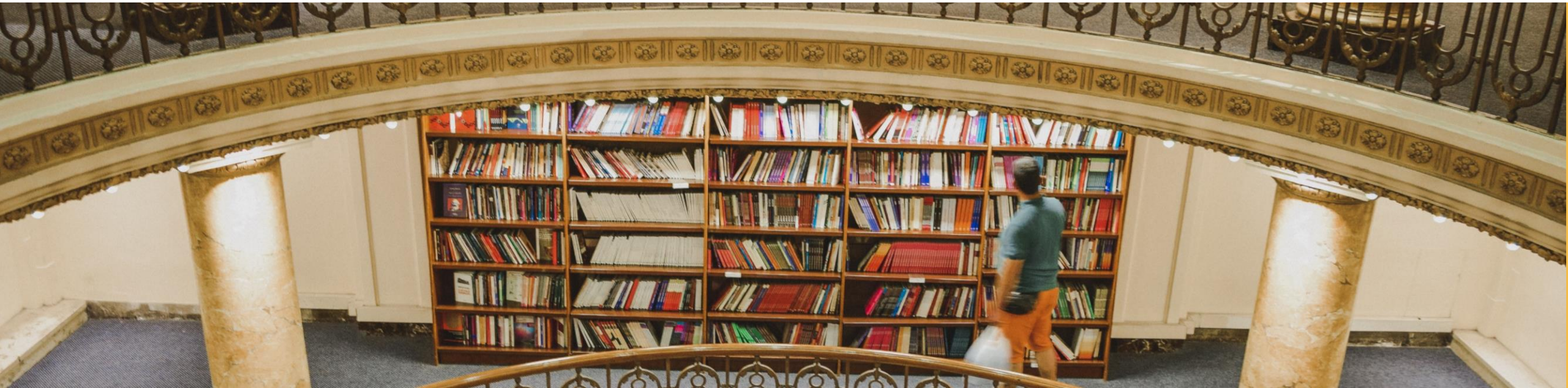
Conclusion and Future Outlook

In addition to helping local entrepreneurs pursue their dreams and local economic development ecosystems to better organize themselves, the WiSys VentureHome® network allows the entire state's economic development ecosystem to reach a new gear through the "network effect."

The value of each WiSys VentureHome® is greater as a collective because the network:

- connects local ecosystems to each other to learn and work together to support local entrepreneurs;
- facilitates mutually-beneficial relationships between state-level experts and local talent; and
- increases the influence and confidence of startups in local communities.

This efficient and layered approach is allowing the state's smaller communities to work hand-in-hand with larger communities to support the state's economic development engine.



VentureWærft - A vivid hub-structure for a cross-border entrepreneurial ecosystem

How to foster entrepreneurship in rural border-regions within Europe – a 12-year perspective.

Authors: Stefanie Jordt, Prof. Dr. Dirk Ludewig

Region: Europe

The role of the engaged university in entrepreneurial ecosystems

Background and Objectives

Over the last twelve years, entrepreneurship has grown enormously on the Flensburg campus and played a leading role in the perception of the university's success. In the Digital Atlas 2018, Flensburg made 46th place out of 401 as a city and shows particular strengths in the digital sector (Handelsblatt 2018). An advantage for the economic power of the entire border region can be more settlements through start-ups and the influx or expansion of existing companies.

Nowadays, VentureWœrft is the overall umbrella brand for starting-up in the cross-border region between Germany and Denmark. It aims at activating and supporting a vibrant cross-border start-up community that covers the entire German-Danish border region, but mainly between Flensburg and Sønderborg. This cross-border collaboration is about creating:

- a common, border-free start-up community;
- a regional hotspot for start-ups besides the classic bastions of start-ups; and
- a structured process for entrepreneurs-to-be on their way on starting their own business.

With a unique combination of important key players in the border region, it offers the entire range of start-up support from the first idea to a successfully growing start-up – all from one source. We strive to combine the strengths of our network systematically to create value for our start-ups. By joining our community, the start-ups gain access to a wide range of start-up-relevant expertise. This is an international network that opens doors to new national markets, know-how and exchange of experience. It can be used as a platform or a stepping-stone for gaining international business experience early on. We promote an entrepreneurial mindset that crosses (national) borders.

Activities Undertaken

The situation in the border region is complicated: there are not enough qualified employees who want to live in the region long term because the German-Danish border region is perceived as peripheral, with poor infrastructure and far removed from everything else (Lorenz 2017). The founding hotspots like Berlin and Copenhagen have attracted more and more attention,, especially the capital of the federal state Schleswig-Holstein has moved into the focus of politics so that third-party-funded projects and start-ups have migrated from the border region.

In 2015 the three German partners, JZF, IHK and WiRE-G considered how they could create a counterbalance to these major players and locations in order to foster entrepreneurship, further advance the region and keep young start-ups not only here but also to attract new ones from other regions.

Together with further founding supporters, entrepreneurs and start-ups, the common umbrella brand "VentureWœrft" was created. It was established as the first point of contact for people interested in founding a company in the entire region around the Flensburg Fjord. This resulting common framework should enable regional institutions and their management to expand a vibrant cross-border entrepreneurial ecosystem and even provide a structure to do so. One of the goals is to increase the start-up numbers and create a growing number of new jobs and attention from outside the region.

The cooperation can be described in terms of a less classical public-private partnership: VentureWœrft is a cooperation between the public sector and the private sector that is not yet contractually regulated but is to be used over a longer period of time. During this time, the partners contribute the necessary resources (e.g. know-how, network and personnel) for joint actions – e.g. for the jointly organised "conVenture - nordic Start-Up convention".

Outcomes and Impact

Focusing on the main German institutional partners (Docks), the following outcomes can be named:

- Short term, indirect: Higher nation-wide visibility: We have more nationwide participants for, e.g. our conVenture, and even Business Angels from the southern part of Germany ask for meetings. We've been asked to display our cross-border entrepreneurial ecosystem on various occasions during the last three years.
- Short term, indirect: Political interest is steadily growing.
- Short term, indirect: Acquisition of new third-party funded projects.
- Short term, direct: Rising demand for entrepreneurial support (more in favor of ideas and start-ups as well as rising start-up numbers although the economy still performs quite well and the foundation rate nationwide is going down again (e.g. GEM Global report 2018/2019 and GEM Germany report 2020/2021). Nevertheless, the demand at Dock1 (our offer for idea stage start-ups) is still quite high: In 2021, 76 projects started using the support of Dock1 with their ideas, and 18 projects founded a real start-up – even during Covid19. By comparison, for 2011: 17 projects were taken up and 6 start-ups were legally founded. In total: 515 projects and thereof 149 foundations of start-ups.
- Long term, direct: Consolidation of personnel positions within the entrepreneurship area at both universities: Especially people working for the JZF had to deal with temporary contracts financed by third-party funds. Now the first positions changed to permanent positions.

Lessons Learned

Although Germany and Denmark share a long common history, everyday life is still characterised by a national border, which in Covid-19 times again became a real border physically but also mentally.

There are also indeed some cultural differences and different ways of working. However, through our previous joint project experiences in INTERREG projects with some oft he Danish partners, this umbrella brand could already be built on resilient relationships. The past period has shown once again that networks also simply need time and care. Joint events, creating a common vision, working towards a common goal - quite banally: Spending time together - were certainly the most successful factors. Another characteristic of this umbrella brand is the contact and cooperation at eye level - regardless of the hierarchy in which the people involved actually work, in VentureWaerft everyone is equal and pulls together. Like the two universities in Flensburg, VentureWaerft lives by the motto "cooperation before competition" and has already managed to build up an impressive start-up scene.

But what we also had to learn painfully over time: If you want to be fast, act alone. But if you want to be successful in the long term, take your time and look for suitable partners. On this somewhat longer path, we have lost startups for which the development of the umbrella brand simply progressed too slowly. This is where the worlds of science and business collide. With the continuation of VentureWaerft from 2023, we will be able to break new ground and better involve start-ups again with a more attractive program.

Conclusion and Future Outlook

The last 12 years have led to closer cooperation between public foundation supporters across national borders. The desire continues to grow among all involved that it becomes much more a matter of course to work with partners on the other side of the border. It is no longer the work that comes extra on top. Working together and a close exchange across the border has become almost normal and is no longer like a one-off day trip to the vacation country next door.

Therefore, the next big challenge for 2023 is making the umbrella brand permanent so that it can be kept alive even without further third-party funding from the universities.

University Industry Innovation Network

2022 UIIN Conference
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GOOD PRACTICE CASE STUDIES: INSTITUTIONAL

Building partnerships for Budapest Business School to prepare students for the future

Unleashing the full potential of Hungary's biggest business university through partnerships.

Authors: László Radácsi, Réka Csaba

Region: Europe

The partnering university

Mission and Vision

Mission

Budapest Business School (BBS) is a university of applied sciences with a distinctly international scope, which develops responsible professionals of the future with its flexible and responsive team. It generates relevant knowledge, incorporating recent developments, through continuous collaboration with social and business partners.

Vision

The leading applied university in Central Europe, which co-creates and shares relevant knowledge with the students, business partners and the society by building communities.

Strategies and Objectives

Fostering student success: We strive to give our students the opportunity for their own development, which will enable them to adapt continuously over the coming years and decades, even though changes in profession, to develop their individual professional successes. As well as the University, the corporate sector also plays an active role in the development process.

Applied research for business and social impact: We wish to increase the economic and social impact of our research, the number of our publications and their visibility on several levels. In the case of applied research, we wish to create useful knowledge in everyday life, alongside business partners, thus strengthening the applied scientific approach.

Partnership with enterprises: One of the basic goals of our university is not only to train professionals for domestic and international large companies and organisations but also to get our students to graduate from BBS programmes as employers of both themselves and others, in accordance with the economic and social needs of the future. We present this approach not only in our programmes focused on business development but also in all our other training and dissemination events.

Sustainable and responsible University: At the strategic level, we work consciously, through guidance and providing a good example, to contribute to a more sustainable future. The focus areas are responsible for education and research, developing our internal community, strengthening our network of external stakeholders and partners, and taking responsibility for the natural environment.

Activities

Education

BBS was among the first among Hungarian universities to introduce Dual Education in 2014, which means that in addition to their studies, students simultaneously gain professional work experience at companies who are industry leaders and with whom the curriculum is developed together. Students receive a salary from the company for the entire duration of the programme, and at the end of the training period, most students receive a permanent job offer. BBS offers Dual Education in 5 undergraduate programmes in which currently more than 100 students pursue their studies with the collaboration of more than 40 corporate partners.

The Citi Global Business Corporate Department (established together with Citibank Europe plc. Hungarian Branch Office in 2020) aims to create direct connectivity between education, business practices, and R&D activities.

Founded in 2017, the primary goals of the Robert Bosch Lean Management Corporate Department are to strengthen the University's courses with practical lean management knowledge, and to provide up-to-date knowledge relevant to industry needs, thus contributing to the acquisition of immediately marketable knowledge that cannot be obtained elsewhere

To prepare students for employment and entrepreneurship internship is a requirement for most bachelor programs at BBS. Students may fulfil this requirement at more than 1000 partners whit whom BBS has partnership agreements, and 80 % of the students are offered full-time positions at the respective company after the completion of the internship.

Research

BBS's four Centres of Excellence (Budapest LAB Entrepreneurship Centre, Future of Higher Education Research Centre, Centre of Excellence for Sustainable Hospitality, Centre of Excellence for Future Value Chains) prepare topic-specific research in domestic and international collaborations, the results of which can be directly used in its training and curriculum development.

The Global Entrepreneurship Monitor (GEM) is the world's largest entrepreneurship survey with national teams in more than 70 countries - and from 2020 the Hungarian team is from Budapest Business School. Based on representative questionnaire surveys and expert interviews, GEM primarily researches and analyses entrepreneurial activity, the functioning and attitudes of entrepreneurs, the situation and functioning of start-up and operating firms, and the attitudes of their founders.

BBS also contributes to the data collection of the Global University Entrepreneurial Spirit Students' Survey (GUESSS), an international survey conducted every two years.

Activities

Commercialisation / valorisation

One of our most successful corporate programs is the Auchan Leadership Program, in which BBS provides professional training for senior managers and to-be directors in the field of finance and controlling. After the success of the first program in 2021, it continues in 2022 with an extended timeframe and developed content based on the feedback.

BBS was the first among Hungarian universities to organise a virtual career fair in April 2021, followed by the second virtual career fair in November 2021 (both with 40-50 participating organisations).

Governance

BBS is maintained by a public foundation from 1st August 2021. The model change came with major developments for a more efficient, centrally coordinated operation, and served the goal of being able to provide a more flexible environment to prepare students for the future and for the growing expectations of economic actors.

The Foundation for the BBS carries out its tasks related to the operation of the university in cooperation with the university's management and citizens, in particular the university's senate and other bodies. The members of the board represent the industries BBS covers in its educational portfolio as top leaders of Hungarian and international companies, bringing their practical experience and corporate perspective into the management of the university.

Support Mechanisms

Prior to the model change business partnership coordinators were appointed at the three faculties (Faculty of Commerce, Hospitality and Tourism, Faculty of Finance and Accountancy, Faculty of International Management and Business) with the responsibility of supporting and building business partnerships, they have been working closely with the deans and were particularly successful in finding sponsors for student competitions, partners willing to offer internships and providing information or business cases for classes and student projects.

Since the model change, the Office for Business Partnership and Alumni Relations (with 4 FTE-s) are responsible for central coordination of cooperation's with external partners and the building of strategic partnerships under the supervision of the Vice-Rector for Strategy. This central unit provides support for the academic staff in case they need corporate partners in the education and research activities, manages incoming demands from present and potential partners and coordinates legal and financial administration regarding partnerships within the university.

BBS has the potential of building the biggest Hungarian business community from the more than 100,000 alumni who graduated from the institution or its predecessors. Some of them are the most respected and successful professionals in their fields, the top leaders of Hungarian and international companies, and the leaders of political, social, and cultural life. The Office for Business Partnership and Alumni Relations is responsible for their engagement in the current education, research, and community life of BBS in the frames of formal and informal partnerships.

The new performance management system is being introduced in the first months of 2022 and one of its most important features is the ability for the academic staff to choose their profile. This way the building and management of business partnerships may be part of their core activities besides education and research, and they will be financially incentivised to perform above expectations in this field. The new HR policy aims to attract more teachers and researchers who can bring new corporate and institutional partners.

Support Mechanisms

The development of business partnerships and entrepreneurship has been one of the 9 main topics of the new strategy created in the past months by dedicated working groups with representatives of all faculties and central units and with the help of the international consultant company BCG. Input from present and potential corporate partners is being incorporated into the strategy.

The strategy has been accepted by the board of BBS and the financial background of the necessary developments (including structural changes, process development, and digitalisation) will be guaranteed. Several changes in the administration are necessary to make it easier for BBS to cooperate with external partners and the leadership of the university is committed to support the process of development.

BBS must also reach the goals set in the financial agreement with the Hungarian Ministry of Information and Technology (the ministry responsible for higher education) to receive additional resources for operation and development. One of the main goals set in this agreement is to significantly increase the number of corporations in the field of R&D and activities in the frames of corporate partnerships.

Impact and Ecosystem

Budapest LAB – Office for Entrepreneurship Development - was the first centre of excellence established by BBS. The goals set by Budapest LAB are to boost initiatives to establish business and to develop entrepreneurial attitudes; to support and foster Hungarian SMSs by creating and equipping them with a necessary knowledge base; and – in the long run – to become a well-known research, development, training and knowledge centre of entrepreneurship development in the Central European region.

The results of the research from Budapest LAB are used not only by businesses but also by governments. A good example of this is that the results of the LAB's Family Business Research Programme are directly referred to in the SME Strategy published by the government at the end of 2019, in which Budapest LAB not only participated in preparing but also prepared background analyses for.

The LAB's Family Entrepreneurship Day conference organised together with K&K Magazine specifically for family business leaders attracts over a hundred executives every year. The practical and interactive event provides an opportunity to communicate BBS's relevant research findings in an understandable way to stakeholders, who can use them to run their businesses more successfully. It also provides an opportunity for entrepreneurs to learn from each other's experiences and prepare for the challenges of business transfer.

The eco-footprint calculator for the SME sector created in the frames of the national Thematic Excellence Program is also a major success. In the case of international cooperation, we use the know-how, mentor skill card and mentoring training developed in the Trust Me and MentorCert projects together with corporate partners. Two other international projects have resulted in the accreditation of ADAPTYKES and INSIST (corporate training) courses, also based on good practices abroad, which are also targeted at the corporate market.

Launched in September 2018, StartLAB aims to help entrepreneurs, business planners and university students interested in entrepreneurship to gain experience, build relationships, and build communities. Traditionally organised on the first Tuesday of every month, the successful entrepreneur guest talks about how they got to where they are now.

Impact and Ecosystem

BBS plays an important role in Hungarian Start-up University Program (HSUP) as the first university to join and giving more students to the program than any other university. It is an e-learning course developed by the National Research, Development, and Innovation Office, for which Budapest LAB provides BBS students with additional professional materials. In the first semester, the focus is on familiarisation with innovative thinking and the start-up world, while in the second semester, students acquire practical knowledge related to building a company. The main goal of the program is to help and support the future generation of entrepreneurs.

Finally, as the biggest higher education institution in the field of business in Hungary (currently with more than 18000 students and a growing alumni community) BBS has a great potential for employer branding corporations with companies in need of highly skilled professionals. Recently, the demand for these types of corporations have significantly increased, however, BBS prefers long-term, strategic, and meaningful partnerships to the sales of services only aimed at students to promote companies as employers.

Challenges and Success Factors

Our legal predecessor, Budapest Business School was established on January 1, 2000, with the integration of three formerly successful colleges. One of the disadvantages coming from the three formerly independent institutions was the completely decentralized operation of the university resulting in ineffectiveness and lack of information, especially in terms of building strategic partnerships. The reforms of the past years and the model change have significantly increased the role and competence of the central units to oversee and control the processes.

One of the main challenges of building strategic partnerships was the public financing of the university which not only made the legal and financial administration of partnerships overwhelmingly complicated, but practically made universities uninterested in the financial terms of the partnerships. One of the main goals of the model change was to create a more flexible environment for development and cooperation with external partners.

The dedication of the university's management towards development and the continuous communication with stakeholders (most importantly its employees) played a significant role in the successful process of the model change. Not sufficient or lack of financial incentives of colleagues was also a major barrier in successfully building external relations, but that substantially changes with the new performance management system.

The lack of central digital support systems is also a main obstacle in professionally coordinating and enhancing partnerships. BBS's new strategy prioritise digital developments and will enable the use of top-notch digital solutions for the support of processes.

Conclusion and Future Outlook

Building partnerships in the field of education applied research and third mission activities is the only possible way to train and develop business professionals who are able not only to attain but to use knowledge and to innovate in order to successfully build their careers or enterprises and solve the problems of the future.

Through years of reforms, continuous development and the recent model change BBS has created the institutional and financial background and flexible environment to implement the necessary developments to be able to build partnerships professionally and let them evolve organically.

In the coming years, a multi-level partnership system is going to be built based on the experiences of the best practices, and a wide range of marketable services will be introduced through capitalising on existing activities which can also fulfil the needs of occasional partners – with the goal of making them long-time, strategic partners of BBS.

Establishing a holistic strategic and organisational approach to the university-corporate relations

A central access point for a holistic university-corporate relationship approach.

Author: Carlos Cardillo

Region: North America

The partnering university

Mission and Vision

The mission is to create and maintain an effective holistic engagement strategy with a central corporate engagement office to manage and guide the university-corporate relationships focusing on collaborations with industry. This university-corporate relationship approach emphasises on maximising overall university values, which include research funding, licensing income, jobs and internships for students, consulting and sabbatical opportunities for faculty, workforce development and educational programs, joint government grants and in-kind donations among others.

The vision is to create and maintain a solid working relationship across campus, using a holistic strategy with key university offices, personnel and a related process that will support successful engagement with potential and current corporate partners. Continuous communication with campus stakeholders to understand and support their needs and document their capabilities and expertise. This will allow a clear and unified message for corporate engagement and a definition of how and why companies will benefit from partnering with the university.

Strategies and Objectives

Both the strategy and objectives are based on the notion that all potential collaborations will be unique, most-likely interdisciplinary and will require an innovative and entrepreneurial approach.

The key strategy is based on the centralisation of all corporate relationships through an office that prioritises these activities and creates strategic plans based on coordinated information and resources across campus. A fast development of strategic plans will require a fast response from university stakeholders (faculty and administrators), efficient gathering of all physical resources (laboratories and equipment), an understanding of intellectual capabilities (know-how and core expertise) available on campus and, assembling tools for corporate relationship planning and management (marketing and communication). A good strategy for efficient university-corporate partnerships requires a clear understanding of both the university's resources, and the external corporate and academic landscape.

Building and maintaining good rapport with stakeholders across campus not only allows a fast and clear development of collaborative strategic plans, but also setting realistic expectations for the industry partner. If the university does not "move at the speed of business", the potential partnership is on a path for failure. For that, relationships with industry will largely be possible with sustained support from university's senior leadership and a clearly defined team of specialists. Initially, a centralised fast contracting system for industry was established on a successful initiative at the Nevada Centre for Applied Research (NCAR). This was established as an initial model to guarantee a corporate-friendly, fast, and efficient formalisation of the relationship. NCAR has a successful and sustainable model for industry partners to access university resources using flexible fee-for-service or use of facility and equipment agreements. However, most of these are short-term or transactional engagements. Larger industry partnerships require customised strategic plans that are materialised with memorandum of understanding and/or customised contracts. These legal agreements are time consuming, and universities are well-known for their internal bureaucracy and slow pace for these documents. Because of this, a key component of the strategy was to focus on improving the legal documents preparation using a pre-defined team (legal counsels and administrators) that will be part of the centralised effort to fast-track documents and legal agreements for the corporate relationship.

Activities

For an R1 university, industry-sponsored research should be essential to all efforts. Through NCAR, the university currently has many projects and initiatives with industry partners and provides a variety of services to startup, small, medium, and large corporations. These activities include colleges, departments, divisions, and centres, as well as faculty members involved in some type of research and development or providing different types of services. These groups are playing an important role attracting companies; however, most of these activities are short-term and transactional.

Due to global competitiveness, industry relationships with universities are moving from a traditional philanthropic model to long-term research and development, and business strategies. Our university-industry relation activities are influenced by the need for companies to receive holistic value from their academic partners, which is outlined in our mission: sponsored research, licensing, student recruiting, faculty expertise, workforce development and joint government proposals.

To meet the competitive challenge and realise the full value of university-industry interactions, a systematic and centralised corporate engagement effort that coordinates all "scattered" activities and resources was put in place. For this, a crucial activity is working with key University leadership to develop creative, forward-looking partnerships that are mutually beneficial for the University and the industry partners.

Another key activity lies in the creation of a robust portfolio of industry partners that build the University financial, technological, and intellectual resources. Understanding what brought some companies to the university in the first place is an activity that helps developing long-term strategic partnerships. Ongoing contact with industry is the best way to build trust, familiarity, sales, or other forms of productive engagements.

Creating analytical capabilities is applied to corporate engagement to survey the landscape of current and potential business partners, create specific profiles, track the status of existing partnerships, and help build a case for establishing or enhancing long-term university-industry partnership.

With a basic corporate engagement framework, it was also crucial to develop Key Performance Indicators (KPIs) to assess specific milestones towards predefined short- and long-term outcomes. These KPIs focus not only on the financial factors, workforce creation, student's employment, faculty consulting opportunities, license and commercialisation, and economic development but also, on areas that are more difficult to quantify such as expansion of university research and development, faculty retention, and overall economic impact in the region. The degree to which we achieve the expected outcomes, will determine the degree of success of the current framework of activities and aid the decision to pivot or persevere in some specific areas.

Support Mechanisms

Support mechanisms start at the institutional level with university leadership committed to corporate engagement. Although leadership understands that a research university heavily depends on federal grants to conduct research activities, it is also clear that maximising corporate relations is critical, particularly when long-term research and development programs are established.

Support mechanism is coordinated at the Vice President for Research and Development (VPRI) Division; an office that has established an entrepreneurial culture based on applied research, commercialisation, and corporate partnerships. In today's globally connected, knowledge-based economy, a key driver of prosperity is the pace of innovation; therefore, we are capitalising on this vision with our innovation ecosystem to facilitate commercialisation, regional collaboration, and faculty competitiveness in a unique way. That is, connecting the university with industry and entrepreneurs, tangibly contributing to economic development, the creation of jobs and supporting the creation of student and faculty startup businesses.

The one-stop shop for the university-corporate relationships is the Nevada Centre for Applied Research (NCAR), which reports to the VPRI Office. NCAR is a stand-alone, applied research and development technology centre that serves to enhance the global competitiveness of industries by leveraging the physical and intellectual assets of the University of Nevada, Reno. The University is home to dozens of state-of-the-art laboratories and facilities and more than 60 research centres that anchor our pioneering work in areas ranging from engineering research, life science, business, entrepreneurial education, social and judicial sciences among others. This one-stop shop is where the Executive Director for Corporate Partnerships office resides, and it has access to all available resources that can lead corporate partnerships to meaningful, innovative, and interdisciplinary collaborations. Support mechanism is not only based on up-to-date inventory of labs and equipment, but also on an up-to-date portfolio of intellectual capabilities. The former is a more automated and systematic process, while the latter is an environment that requires meticulous human interaction; both are a dynamic and ever-changing challenge. In addition, the corporate partnership office is advocating implementation of merit and an incentive system for faculty participation in corporate programs.

Impact and Ecosystem

The University of Nevada, Reno (UNR) is a land-grant institution, founded in 1874. It is classified R1, with very high research activity and the annual economic impact is about 1.1 billion. UNR is in the Northern Nevada region, which in the past several years has experienced unprecedented growth with the addition of companies like Tesla, Panasonic, Switch, Google, Apple, Microsoft, Amazon, Ebay, Koch and more than 100 others. The addition of these larger companies keeps producing an increasing number of new companies looking at the region as a possible place for business and the creation of startups that can support their larger operations. Companies moving to the region are taking advantage of the business-friendly policies offered by the State of Nevada, such as no corporate or personal income tax, no franchise tax on income, and no inventory tax, among many others.

This corporate migration is creating a high-tech ecosystem in the region that is largely fueled by a knowledge economy. As the need for ready access to knowledge, information and high skilled labor increases, the university is in a unique position for a successful corporate-engagement growth. When corporations build trust with the university and its efficient programs, more corporate engagement opportunities will arise. Along with the classic university-industry collaboration, the university works closely with economic development authorities, municipalities, state, and federal agencies nurturing the triple-helix model creating new initiatives and partnerships between industry, academia, and government.

As the Corporate Relations office grow, more mechanisms are being created to quantify not only the straightforward fee for service, fee for use of facilities and equipment, corporate-sponsored and licensing revenue, but also the expanded applied research capacity for the university and the corporate growth that is attributable to the university-industry collaboration.

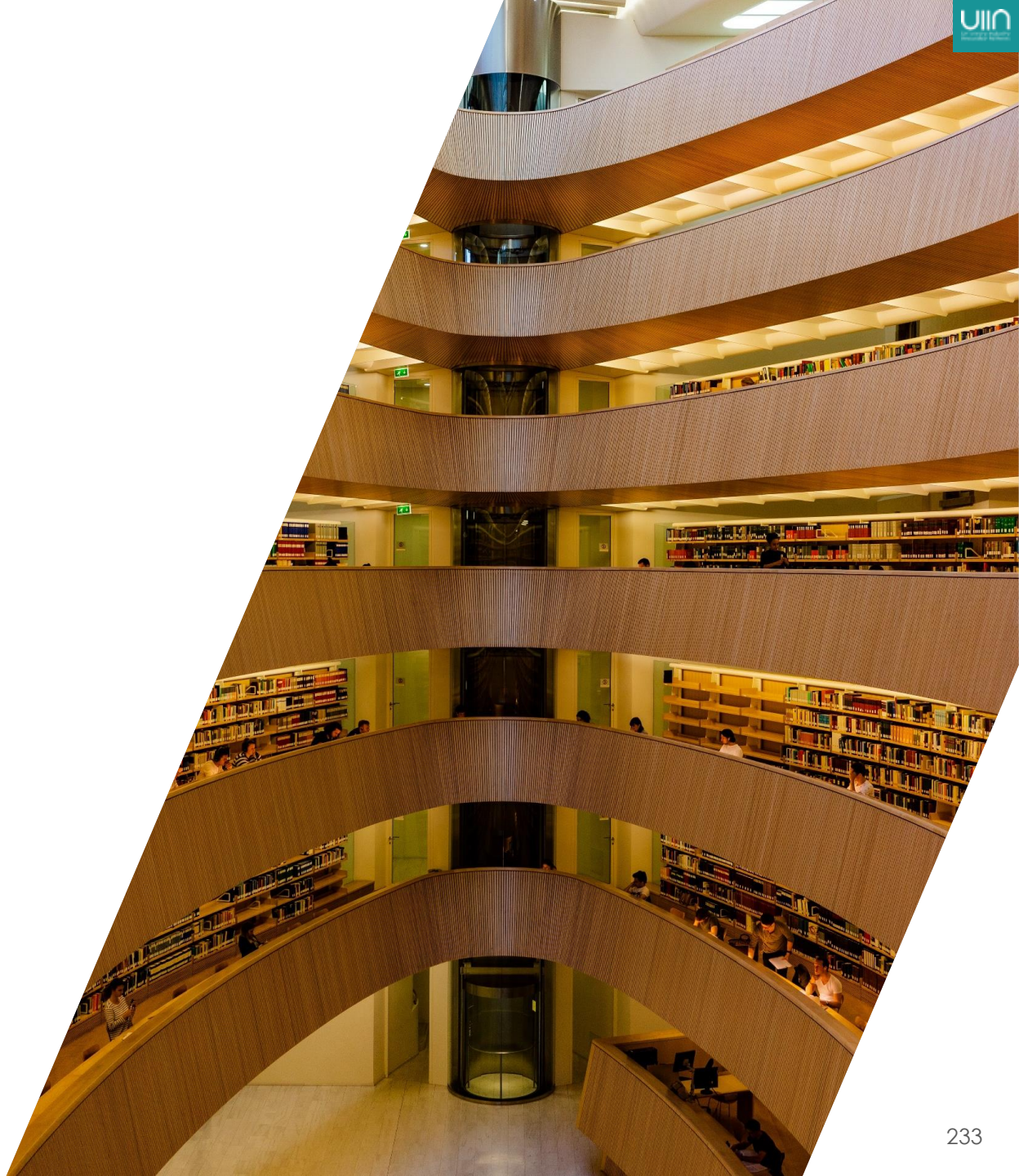
Challenges and Success Factors

The first challenge was campus coordination. To be a portal for industry to access university resources, the corporate relations office had to build strong working relationships with offices across campus that are key players for any engagement with the industry sector. A greater challenge for campus coordination however, was (and continues to be) establishing a trusting relationship with both, academic and administrative faculty. Without faculty participation, along with the team of students and support they can provide, corporate engagement is not possible, even with access to the best laboratory infrastructure. Academic faculty members are immersed in their research or focused on government grant proposals and execution, and administrative faculty in their day-to-day operation. Encouraging faculty to invest time in the development of corporate programs implies moving them from this traditional model to a corporate-engagement model, which takes time and is an on-going effort that requires dialog, a merit system, and incentive models. Although there was significant progress for faculty participation in industry programs, this remains a challenge; faculty expertise and personalities are continuously shifting on campus.

Similarly, corporate-engagement role is continuously shifting, and each corporate relationship pose a different challenge and certain level of customisation. Our corporate relations office has the challenge to bridge and balance the university-industry relationship, making sure that is mutually beneficial. "Matching industry needs with academic goals" is the motto of this office but, achieving that balance and identifying and matching the company's strategic needs and the university's strengths to develop collaborations that support the mission of each partner is a complicated task. In addition, as the university expects licensing revenue and wants to protect patent, the complexity of some corporate-sponsored research agreements remains overly complicated and time consuming.

Conclusion and Future Outlook

An initial university-industry interaction framework is the roadmap for a successful and efficient corporate engagement. Performance measures will help define success and how specific components of the framework can be improved or reshaped. Internal human factors may be a roadblock, as some faculty and key personnel may be reluctant or opposed to industry interaction or corporate-sponsored research programs. Thus, an important aspect of the framework is a continuous internal institutional campaign to outline the benefits of university-industry engagement. For this, university leadership should encourage and nurture industry collaboration and make it part of the university mission. The role of the office of Corporate Partnerships will continue to focus on seeking institutional support to guarantee university-industry collaborations that are mutually beneficial. Being a central access point for industry will continue to provide fast and efficient university-industry interaction facilitating access to integrated research and development programs through continuous campus coordination.



Infrastructures for co-production of research, competence and business supporting energy system development and electrification transition

Energy and electrification industry partnering leads to 18MEUR national competence centre and unique students' CVs.

Authors: Fredrik Wallin, Mikael Hjorth, Eva Thorin, Helena Jerregård

Region: Europe

The partnering university

Mission and Vision

Mälardalen University (MDU) was founded based on collaboration and it is a part of the university's DNA. The University was founded in 1977 to fulfil several needs in the region, and close cooperation with both the private and public sectors was quickly developed. The University's Vision to be "a progressive and collaborative university where together we form a sustainable future" was developed in a dialogue with employees, students, and collaborative partners.

The university's overall vision is reinforced through a number of clarifying statements, and especially in relation to our partnering activities, it is stated that "The co-producing research and education environments are engines for knowledge development and innovation. Thanks to a unique collaboration between academia, civil society, the private and public sector, value is generated in a global society."

Strategies and Objectives

In the research and educational strategy, MDU states its ambition to be at the forefront among Swedish universities within co-production with the surrounding society, an ambition that involves both research and education. Core underlying reasons and motivation for collaboration and co-production include: To strengthen the students' employability after their degree; Offering the employees lifelong learning through strong networks, new perspectives, and opportunities through collaboration; To more effectively generate and spread new knowledge, novel technologies and elaborated methods. Overall, the collaboration and co-production should be carried out thoughtful, long-term, simple and with curiosity. Activities should be of benefit to all parties.

At MDU there are in total six research specialisations where Future Energy Centre (FEC) is one of the internationally competitive research environments. Over the last 10 years, the environment has gone from a relatively broad scope to strategically three developed focus areas with regards to the future energy systems - renewable energy, resource efficiency and digitalisation. The MDU/ FEC aims for more dissemination and information activities towards regional and national stakeholders to enhance the awareness of co-production benefits and interconnect research with regional development. This also led to an updated long-term ambition of the MDU/FEC role and position in 2030 – to provide the combination of international collaboration and industrial co-innovation. A high degree of co-production with partners, internationally leading industries, and cities within sustainable development, should together with excellent research contribute to an internationally recognised and attractive research and education environment.

On a regional level, the MDU is situated in a geographical area which gathers a world-leading energy and electrification industry. Only at the university campus cities, Eskilstuna and Västerås, a broad variety of larger multinational companies (ABB, Alstom, Hitachi Energy, Northvolt, Westinghouse Electric) and key governmental agencies (Swedish Energy Agency, Energy market inspectorate) co-exist, only to mention a few. The city of Västerås is the self-proclaimed "Energy capital of Sweden," and the larger region of East middle Sweden constitutes of five regions that have appointed "Energy solutions of tomorrow" as one out of four smart specialisation areas and is, therefore, a key development area when it comes to competence, talents, innovation and development and supportive schemes for strategic growth.

Activities

This is a short summary of some of the ongoing activities to build capacity in the area of sustainable and resilient energy systems to meet the challenges of a high share of renewable (intermittent) energy combined with mega trends such as electrification and digitalisation. Our work includes, via partnering, the establishment of infrastructures, joint academic programs, testbeds & demonstration arenas, and programs for accelerating and matching innovative SMEs with multinational companies. Below, three strategic activities (SAs) are shortly described. Combined, they have contributed to a systematic and long-term approach towards a higher degree of co-production in energy research and education through partnering with industry and public sector.

During 2013-2015 a new energy engineering program was designed, developed, and launched (SA1) in close collaboration with industries in the energy sector. The activity originated from the urgent need of more trained engineers in the field of energy and electric systems. Regional industrial stakeholders were deeply involved in the development of the program and its courses. The long-term industry commitment has been shown through their willingness to contribute with experts highly involved in the educational program. In total, one full-time position has been provided as a resource as teachers to use in the program. The time has normally been distributed among four industry partners, which allow the university to bring in highly experienced engineers, often with PhD degrees, as teachers in areas such as electricity network planning and operations, power technologies, electric motors and propulsion. The university has supported the engineers with pedagogical courses.

During 2017–today, MDU has been working with a strategic activity (SA2) for the establishment of an energy hub. As stated by the Swedish Agency for Economic and Regional growth "The project aims to meet Sweden's need of a coherent, sustainable energy technology hub for system services in a way that can only be achieved through in-depth co-production between international companies, SMEs, research and a strong public sector." The activity was based on an identified need by the region to support development and coordinating innovation actions, on a regional level to collaborate more and to accelerate development in renewable energy systems and sustainable cities. Focus is to shorten lead times, from idea to solution implemented on the market, i.e., accelerating innovations. The action has three main outcomes:

- Establishment of energy data portal for novel analytical possibilities (https://nrgyhub.mdh.se).
- Testbed capacities and large-scale infrastructures and demonstrations.
- Development and operations of an acceleration program (www.scalehere.com).

Various parts are governed by different partners but operated in close collaboration with the ambition to coordinate, facilitate and accelerate products, services, and start-ups within the sustainability area.

Activities

In 2021 the university initiated a comprehensive strategic work (SA3) on gathering key regional stakeholders in the value chain of electrification – an Electrification hub (www.electrificationhub.se). It originated from a pre-study during 2020 carried out by the region and the municipality exploring the challenges around transition of electrified transports. It became clear that the larger region of Mälardalen had industrial companies contributing with technologies and products for the complete value chain, from the electricity system providers (Hitachi Energy), battery manufacturing (Northvolt), charging infrastructures (ABB and Hitachi Energy), electric engines/motors and propulsion (ABB, Alstom), to development of the new generation of heavy vehicles (Alstom, Epiroc, Scania, Volvo CE).

The key objective is to accelerate the transformation of electrified mobility solutions through activities in several areas:

- research, development, and industrialization;
- competence and attraction;
- communication & industrial establishments;
- and policy development.

Most of these areas are complementary to earlier initiatives as it addresses larger industrial companies, whereas others build on the development made in energy hub.

Support Mechanisms

In 2018, MDU clarified the importance of collaboration and co-production by appointing a deputy vice-chancellor with responsibility for co-production, to coordinate such activities across all university departments. The ambition was to further deepen the work with collaboration and co-production, both regionally and nationally. There are several mechanisms and frameworks that support this for various purposes. MDU uses strategic partnerships to develop structured collaboration with selected organisations. So far these have been dedicated to bigger industrial organisations, usually those with extensive research and development activities. The long-term development in these is monitored by a board with representatives from the management groups at each organisation. A "core team" is driving the operational work during the year. These core teams usually involve key persons within the area under development, corporate research managers, human resources/university relations managers, leading researchers within the relevant areas, heads of subjects and education program coordinators. The work is facilitated, supported in its progress, and continuously documented by a designated process leader. Indicators are developed in collaboration between the university and external organisations to monitor progress in pre-agreed areas of development.

Another mechanism, the collaborative platforms, are used to develop a long-term, structured way of coordinating activities in certain areas, such as automation, robotics, and the latest initiative - electrification. The platforms are usually starting as joint projects that are operated by the university, but initiated with multiple stakeholders, often industry together with the public sector. To support the development of joints projects and initiatives, these platforms have benefits such as increased administrative support and the university invests internal funds to facilitate and catalyse collaboration. The goal is to drive multiple joint questions to reach long-term development in several areas such as increased research within an area, skills, and competence development, developed testbeds and demonstration activities of novel solutions, shared good practices, and policy development.

In education, a mechanism of coordination of professional courses for life-long learning, on advanced as well as lower level. In these, various research and educational areas have identified and developed courses together with frontrunners in industry to meet requirements of tomorrow's needs in competences and skills.

Support Mechanisms

Finally, a new initiative and support mechanism, still under construction, is a joint physical arena for collaboration and co-production. The university is moving out parts of its campus to one of the oldest industrial areas in the region which hosts the majority of the multinational industries, many of them active within the energy and electrification field. The original name of the arena was Collaborative Centre (C2), which originated from the need of joint spaces when developing robotics student projects together with industrial partners. Now the ambition is to move out, to start with, all engineering courses which are suitable for industrial collaboration, such as degree projects, project courses and other activities to this physical location. In parallel the university is inviting industrial partners to sign up for offices to create a natural melting pot between industry, research, and education, to enhance collaboration and co-production and to accelerate innovation. In addition to the physical space, the university is looking into what types of facilitation and support can be provided by e.g., the collaborative platforms and eco-system actors to drive this development.

Impact and Ecosystem

During 2012 the university established Energy Competence Centre (ECC, www.eccsweden.se) together with a triple helix formation of stakeholders, several larger energy-related companies in various domains – utilities with heat and electricity generation, vendors related to power, automation, electric machines, and propulsion systems. It is a cluster of organisations that governs the work and identify joint activities (see SA1). In 2018 the first co-produced BSc engineers were graduating, and after two additional years, the first MSc engineers were employed by some of the industrial partners. Within ECC, partners have also developed a joint national conference every year since 2014 which attracts about 300-400 participants annually. The HUB conference (www.hub2021.se) serves as a platform to discuss energy system development needs, policy development and competence issues with decision-makers and relevant industries in the energy sector.

In 2017 the project World-Class Energy Solutions (see SA2) was launched. It led to the formation of NRGYHUB (www.nrgyhub.se), a collaborative arena where partners from energy sectors working inter-regionally meet and provide support for accelerating innovations. In addition to regional partners, this broadened the scope and involved partners in East-Central Sweden (EU funding sector) that mean that the university and the region worked to bring together several stakeholders – from the energy sector, innovation ecosystem, and national agencies such as the Swedish Energy Agency. It was based on discussions with the five regions in the area and industries of the need to collaborate more in the innovation ecosystem, to interconnect innovative start-ups with established industry, accelerate start-ups to become scale-ups and making access to researchers, experts, and students easier for innovative SME companies. The ambition has been to establish a co-producing arena with a set of tools which could accelerate products, and services as well as the innovative companies themselves.

An impact of this work, which has taken some time due to the complexity of working with this breadth of actors as well as complex data issues, is that energy system data is available for researchers, students, and companies. In summary, there are in total 7000 electricity users, 2000 districting heating users, and 2000 water users included together with real-time measurements from large PV solar installations. A large 40 ha large solar park is under planning with an expected installed capacity of 30 MWp and a solar production of 30 GWh/year (electricity for appr. 15 000 apartments). A scale-up program has been developed and run multiple times, with +20 start-ups that have been supported. Also, open innovation approaches such as a Dragon's Den, Hackathons and Open Data Challenges have been tested and evaluated. A big value for MDU is that thanks to the unique collection of energy system data, several large research applications have been granted such as the industrial collaborative research project "Energy flexibility through synergies of big data, novel technologies & systems, and innovative markets" which involves energy utilities, the buildings sector, battery industry and data centre providers.

Impact and Ecosystem

In 2021 MDU, together with the region, established a non-profit association and a limited company to bring together the stakeholders of Electrification Hub. This establishes a collaborative platform with bigger industrial companies, where it was important to form an independent organisation, which could also host results, and joint projects, which is not always suitable to operate from a university. E-Hub develops prioritised strategic activities (see SA3), such as initiating and gathering experiences from larger electrification demonstration projects, supporting competence transformation (upskilling, reskilling), and collaborating on existing industrial electrification testbeds which are available at the industry partners. The expressed ambition is that this will develop into one new collaborative platform at the university.

Challenges and Success Factors

There are many challenges in establishing a collaboration and co-production atmosphere that permeate an entire organisation. As identified in a previous research evaluation at MDU, external experts pointed out that the university's high ambition in being a co-producing university was not fully understood by employees. In fact, the nuances, and differences between doing research and education in cooperation or in co-production were not fully understood by the researchers and teachers.

One important success factor is mutual understanding for each other's conditions and opportunities to contribute to a collaboration. Time frames, perseverance and changes in governance and financial conditions are all parameters that may affect the outcome of partnerships. The university's long-term ambitions to have 2-3 of the research funds from external grants have driven researchers to leverage governmental funds to increase the overall research budget. Further, having several funding organisations that support academic-industry research partnerships has accelerated the development. A well-developed, structured, uniform methodology to manage strategic partnerships have contributed to continuous improvements and to continuously keeping the distance to a minimum between the management of strategic partnerships and the operations. Further, an exchange of people between academia and industrial partners gives a deepened knowledge of each partners' needs, preferences, and possibilities.

A majority of all strategic partnerships include targets related both to research and education. This also helps the university to find and elaborate values for the students. The joint development of the energy engineering program (see SA1) has given a number of contacts and points of interaction between individuals in industry and in the university, which overall increases the mutual understanding.

Finally, smart specialisation has been a long-term conscious strategy through which the region has supported a development in areas that address societal challenges – identified in the Business Plan for Regional Growth (Business Plan Västmanland). This has enabled a focus of the innovation ecosystem through financial support, of organisations supporting start-ups/scaleups, business development, the establishment of research institutes and platforms for collaboration at the university. Several of the initiatives have had financial support from regional funds as well as e.g., ERDF and national funding, which has leveraged the combined strengths in industry, in academia and in the public sector towards future development areas. Combined with the strategic approach and work at the university, this has given opportunities to work together in an entrepreneurial discovery process.

Conclusion and Future Outlook

In summary, MDU has seen through external research evaluations that long-term partnering with leading industries in the energy sector and many applied research activities, also allows for an overall high impact factor of produced research. Excellent research in combination with the developed infrastructures described have resulted in that MDU will start a national competence centre in 2022 to build up research and industrial competence in resilient energy systems together with four research organisations/universities and +40 national industry partners, with an overall budget of 189 MSEK.

On the educational side, students will gain benefits from industry-relevant projects where they collaborate professionally in our developed collaboration centre. MDU will provide students with an additional dimension in their CV, to conduct relevant projects in close collaboration with our strategic industry partners. Our industrial partners, on the other hand, will have the possibilities to develop relationships continuously with the next generation of engineers.

Just do it!

Making innovation and entrepreneurship matter at Stellenbosch University!

Authors: Anita Nel

Region: Africa

The entrepreneurial and innovative university

Mission and Vision

Stellenbosch University is among the world's top 300 universities and aims to be Africa's leading research-intensive university, globally recognised as excellent, inclusive and innovative, where we advance knowledge in service of society. We are a research-intensive university, where we attract outstanding students, employ talented staff and provide a world-class environment; a place connected to the world, while enriching and transforming local, continental and global communities.

Innovation and entrepreneurship are considered to be critically important enablers towards achieving the university's mission and vision.

Strategies and Objectives

Stellenbosch University (SU) in South Africa is cementing its reputation as a world-class institution. According to the Times Higher Education World University Rankings, SU is one of the top 300 universities in the world.

The university has always been recognised for its successes in terms of innovation, new spinout companies and commercial thinking. However, it was clear that there was much work needed to upscale entrepreneurship.

At the same time, South Africa was adopting new legislation loosely based on the Bayh-Dole Act in the United States, giving universities ownership of intellectual property developed on a non-full cost basis and ensuring that every state-funded research institution establishes a technology transfer office to commercialise these inventions. The dilemma was that this Act created an unhealthy expectation of commercial success for university management across the country. Research showed that only 16% of technology transfer offices in the United States were either profitable or breaking even. The technology transfer model in the United States leans very strongly towards patenting and licensing inventions.

The question about impact of technology transfer activities arises frequently and it became clear that licensing is not necessarily an optimal model if a university wants to make a real and strong impact with its research output. Looking at models in the United Kingdom and Europe (specifically KU Leuven, Cambridge and Oxford), it became clear that there was immense potential for SU to become a hub in a knowledge region which already contained elements of all the ingredients required for success. However, there was still a large amount of integration and other work needed to turn this into a reality. To achieve success, SU started by changing the mindset on campus to become far more entrepreneurial.

However, it was time to step up the game in terms of support and to "just do it!" It meant that the technology transfer office had to cleverly manage expectations and risks associated with spinout companies and had to be very sensitive towards the remarkable resistance and fear of "corporatisation of the academic institution". A successful strategy had to bring together a large number of stakeholders, each with their own agendas, under one umbrella and funding was also needed to kickstart these efforts.

"Just Do It"

Activities

Starting a company from an academic invention is a very daunting yet exciting opportunity for any researcher at a university. However, universities are typically not geared towards commercialising their research output or their services through spin-out companies or other mechanisms. However, SU developed an interconnected and comprehensive suite of outstanding structures, services and resources to support academic entrepreneurs and support staff not only during the startup process, but also during the lifetime of the company. These services also extend to commercialisation of specific university offered services to ensure that these services are provided in an agile and commercial-friendly environment. There is evidence emerging that these efforts have been highly successful, and it is also spilling over into a more entrepreneurial mindset at the institution.

Support Mechanisms

Several well-integrated and complementing structures and platforms were established to achieve an agile environment with transparent corporate governance: Innovus, SU's division responsible for innovation and commercialisation, consists of the Technology Transfer Office (Innovus TTO) and SunCom.

Innovus TTO has a highly effective team focused on managing the university's intellectual property. The Translational Fellow Programme (TPF), initiated by Innovus TTO aims to: translate world-class research of SU into innovative products and services impacting society; and encourage and enable graduates to pursue an entrepreneurial career in science.

Similarly to TTO, SunCom commercialises non-academic university. SunCom works with students and/or support staff to commercialise solutions and services associated with the university.

A comprehensive Spin-out Company Information Guide was drafted to ensure that campus-based entrepreneurs wishing to start companies are well-informed of processes, expectations etc forming part of the process and to provide transparent information to help them understand Innovus' role in achieving their dreams by commercialising innovations through spin-out companies. It also explains the contracts forming part of the process and provides simple explanations of legal terms in these agreements.

University of Stellenbosch Enterprises (Pty) Ltd (USE), a wholly-owned university company, holds the institution's shares in its' group of companies. Directors of USE are mostly seasoned independent directors who are prominent business leaders in industry. This structure ensures that risk associated with a group of companies is removed one level away from the academic institution. Moreover, that there is a dedicated and suitably qualified oversight function ensuring that corporate governance and reporting of the university's spin-out companies are implemented, and finally, a commercial vehicle with the associated agility to conduct business in an optimal commercial environment, without the hinderance of slow decision-making processes and policies rooted in an academic environment.

The Instant Startup (IS) Toolkit is an online platform with comprehensive tools, forms, documents, explainer videos and company secretarial support services for spin-out companies. SU spin-out companies receive personalised access to relevant templates to plan, launch, organise their business. Templates include guidelines for business plans, financial dashboards, board and shareholder meeting agendas and minutes, investor pitch decks, company valuation methods, employment agreements, licensing contracts, service level agreements etc. Other documents provided include tax forms, guidance on registering trademarks, patents etc.

Support Mechanisms

The IS platform also offers free or discounted services from various service providers and is backed by a small team of individuals dedicated to providing brilliant support, acting like a concierge service for startups. They set up new companies, facilitate opening of bank accounts, register trademarks and company names, provide financial systems for the start-up company, provide training, assist entrepreneurs with administrative and time-consuming challenges (including, assisting them to obtain tax certificates, registering as a supplier on commercial partners' procurement systems), company secretarial services, etc.

The Stellenbosch University LaunchLab (LL) is another initiative of Innovus to build the next generation of sustainable, high-impact companies tackling the world's toughest challenges. SU spin-outs are serviced by the LL to reduce risk associated with a startup and to fast-track their take-off to becoming sustainable businesses. The LL is globally acknowledged as Africa's leading university-based incubator.

The University Technology Fund (UTF), the first private investment fund in Africa solely dedicated to investing in technologies from various universities, was conceptualised and raised by Innovus.

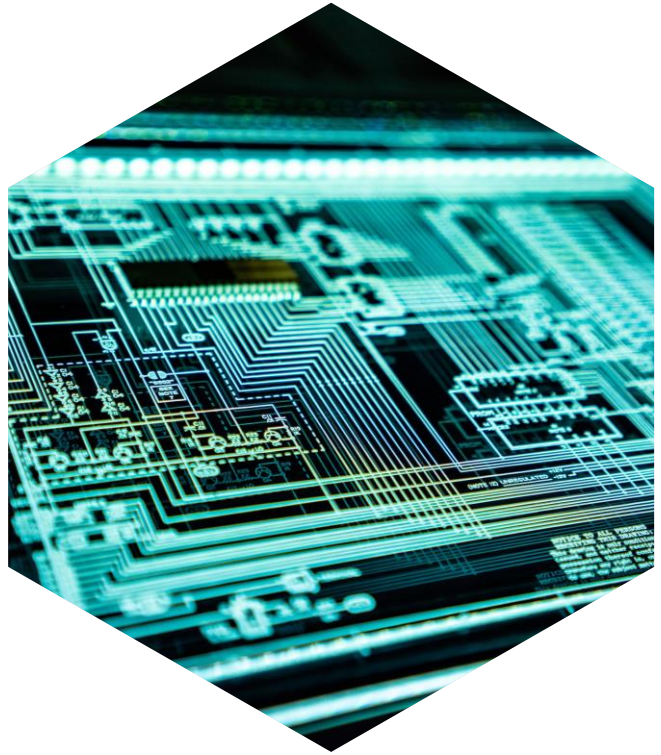
The Stellenbosch Network (SN) was established as a non-profit organisation for industry, government, society and academia. Role-players include innovators, entrepreneurs, SMMEs, investors, industry, social entrepreneurship enterprises, knowledge institutions and government. SN provides a bridge between university and local entrepreneurs, and the larger business community and is a critical stakeholder in connecting SU's entrepreneurial activities with the broader ecosystem.

Impact and Ecosystem

Since Innovus TTO at SU started with a proactive approach to promote entrepreneurship also as an alternative employment option for graduate students and academic staff, significant growth occurred in the number of annual spinout companies at SU, as is evident from the university's spin-out timeline which shows clearly the steep growth in spin-out companies since the establishment of the SU LaunchLab start-up incubator and business support unit in 2014, which was the first proactive mechanism to support entrepreneurs better. It has also created a great awareness among both staff and students of the possibilities of starting new companies with the support of the university and it contributes towards a positive and entrepreneurial culture on campus. It achieved an important paradigm shift among academic staff and students to make them believe that they can do it.

The launch of the University Technology Fund (UTF) in January 2020 was another incredibly important milestone. It had a great impact on the university startup environment in South Africa and the perception among investors that university technology is not a suitable asset class. Despite the fact that it was established right at the beginning of the hard lockdown period in South Africa due to the global COVID-19 pandemic, it has already made no less than 27 investments at four academic institutions over the past two years. If pre-seed investments are excluded, the number is still very significant with 12 investments at three institutions.

Therefore, the growing pipeline of projects in various stages of spinning out of the institution is testament to the successful implementation of the new strategy. A remarkable increase in the interest from industry showed in funding and supporting technologies and commercial ventures at the institution further cements the success and impact of the new approach.



Challenges and Success Factors

The biggest challenge in driving an entrepreneurial mindset at a university is to challenge the "old thinking". A contributing complexity is the fact that decisions are not necessarily made by individuals, but through committees where bureaucracy and risk aversion form part of the DNA of the institution. A university is slow and very resistant to change, and it is built on policies and practices and an academic calendar that are functionally designed for an academic teaching and research environment – most definitely not for commercialisation and entrepreneurship. In fact, commercialisation is a word feared throughout the academic system. Immense sensitivity and diplomacy and patience are needed to introduce a more entrepreneurial mindset and associated activities on campus.

A huge success factor in the case of SU was the support from the top management of the institution and the bite-sized interventions that were introduced one by one. The fact that the associated and perceived risk and commercial activities could "safely" be ring-fenced in a wholly-owned company with strong entrepreneurial presence on the board of directors, was another critically important success factor.

By drafting and adopting institutional policies governing certain types of activities in a transparent manner with clear "rules of the game" also contributed significantly to success.

The visibility of an incubator facility with a vibrant feel to it was a huge breakthrough in demonstrating that the ball was now rolling for entrepreneurship.

Keeping communication channels open when the system resisted change and experienced new initiatives as territorial threats was also good practice. Patience and understanding that there will always be opposition and obstacles when introducing new initiatives go a long way to prevent demotivation for those who attempt to drive change. Another important piece of advice that was given by an expert is to focus on those people who want to work with the team driving change and not spend too much time trying to convert those who are obstructing the process.

Gaining early successes and communicating it widely and suitably on campus gave good momentum to the next phases and initiatives to drive change towards a more entrepreneurial university and provided the team with the necessary credibility to do their work successfully.

Conclusion and Future Outlook

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us - quoting Charles Dickens in an attempt to describe the process of mobilising the institution to become more entrepreneurially thinking.

Although it is still early days, the successes of moving towards a stronger entrepreneurial culture and support system for staff and students are already very clearly visible and it is incredibly rewarding. Academic departments are contributing financially to the LaunchLab voluntarily, asking for entrepreneurial development of their students.

The University is now planning entrepreneurship modules in every undergraduate course. A group of business leaders donated 30 hectares of land in an area to be developed as a Smart City expecting the university to establish an innovation district in this space.

These are logical next steps in the process towards confirming SU as the most entrepreneurial university on the African continent.

KTH Royal Institute of Technology strategic partnerships, the next steps #KTHTogetherForImpact

KTH Royal Institute of Technology Strategic partnerships, the next steps. #KTHTogetherForImpact.

Authors: Johan Blaus, Mikael Östling

Region: Europe

The partnering university

Mission and Vision

As a leading university, KTH takes responsibility for the role of technological advancements in societal development and creates breakthroughs and social benefits from education and research. This applies locally, regionally, nationally, and globally. Collaboration and partnerships with private and public sector stakeholders is an effective way to create breakthroughs and social benefits while at the same time contributing to the quality and relevance of our own education and research. Leading collaboration creates major social benefits from research and secures social relevance in educational programmes.

In collaboration with its external partners, KTH is a leading proponent of the transformation to a more sustainable society. KTH, with its expertise in sustainable development, aims to be at the forefront of digitalisation in education, research, collaboration, and organisational support. Partnerships with external organisations in various forms are one of the most important means of achieving the ambitions.

Strategies and Objectives

KTH's objectives and strategies are formulated in our six-year development plan. The current development plan (2018-2023) states that KTH should maintain its position at the forefront of collaboration and social benefit, which demands challenging goals, continuous learning, and systematic and ongoing development. Collaboration and social benefits are a concern for KTH as a whole and initiatives are implemented in this area to further increase awareness and engagement among students and staff. KTH has prioritised five areas concerning collaboration and partnerships in the development plan:

- Further develop the work with strategic partnerships and large-scale collaboration platforms.
- Increase mobility of staff to and from KTH.
- Develop incentives for collaboration.
- Develop and coordinate internal support for collaboration.
- Ensure that collaboration is included in the planning, development and assessment of research and education

Strategies and Objectives

Partnerships with external organisations in various forms are one of the most important means of achieving the ambitions. Even though KTH's program with strategic partnerships is one of the more prominent ways in which KTH works with partnering, there are also other forms, such as consortia and partnerships in major research initiatives, centre formations and other thematic initiatives.

There are some guiding principles for the Strategic Partnerships program, these principles are applied to other contexts for partnerships as far as applicable. KTH uses the strategic partnerships as a "role model" to develop general collaboration capabilities. **The main principles are:**

- Mix of different categories of organisations. Large companies, small and medium size companies, the public sector, and research institutes.
- Commitment and engagement by the top management.
- Clear structure by combining academic leadership and administrative support.
- Combining Top-Down and Bottom-Up initiatives.
- Encourage involvement from several partners in initiatives, some areas of common interest are: Sustainable development, Digitalization, LifeLong Learning and Horizon Europe.
- Utilise synergies with KTH's research platforms, which bring together researchers and research groups in areas that are based on strong areas of research at KTH, six focus areas have been created. These work as platforms for multidisciplinary research.

Some other overarching priority areas for partnerships are:

- Integrate internationalisation issues.
- Link collaboration and partnership to the university's quality system.
- Invest regularly in review, follow-up, and reflection on working methods, goals, and results.

Activities

Working with partnerships should develop the university's culture and contribute to a strengthened societal Impact. KTH is a large technical university with a high number of activities, initiatives, centres, and projects. We strive to involve and cross-connect between these structures, scientific disciplines, and activities to foster learning and making greater Impacts.

Examples of activities in Education

- A series of workshops with strategic partners, employers' organisations, trade unions and trade associations in the theme "Future Engineer." These workshops are connected to an internal development work about the future education at KTH.
- Formation of a "Future Engineering Education Advisory Forum," an arena for interaction with KTHs strategic partners about the role of engineers in working life, competences needed and requirements on the educational programs.
- Encourage thesis work with partners through workshops, newsletters, and the Degree Project portal, https://www.kth.se/en/samverkan/exjobb/kth-exjobbportal-1.292786
- Stimulate more challenge driven projects together with partners.
- Investments in Makerspaces, where partners are engaged to formulate challenges and project ideas for interdisciplinary teams of students to address.

Examples of activities in Research

- Bilateral workshops with partners regarding long term Technology Roadmaps (TRM) and identifying areas of common interest for joint research.
- Workshops and event to encourage joint initiatives with partners in Horizon Europe to set and position the university for a European research strategy plan.
- Sharing good practices of collaborative competence centres between our centre directors.
- Regular meetings with Impact leaders, partnerships a theme on regular basis.
- Cross-connect KTHs strategic partnerships to KTHs Research Platforms.
- Include collaboration and Societal Impact in the Research Assessment Exercises, supplemented with Impact cases

Examples of activities in commercialisation/valorisation

- Sharing the approach of KTH Innovation Readiness Level® to partners, https://kthinnovationreadinesslevel.com/

Activities

Examples of activities in Governance

On an overarching level, the strategic partnerships must be part of the top management at the university. The strategic partnerships program is in the portfolio of the Deputy President, well supported by the Director of Strategic Partnerships and the partnerships support manager.

The main parts in each partnership structure are:

- Annual bilateral management dialogue.
- 3-4 meetings annually in the steering committee of each partnership.
- Activities in working groups/themes.
- Key roles in each partnership:
    - Partner director, a representative from the faculty that is responsible for the relationship as well as responsible for engaging other academics in the partnership.
    - Partner manager, professional staff that supports the partner director and generally facilitates the partnership.

All partners are invited to several annual activities:

- Roundtable discussions about 2-3 times annually with the president and deputy president.
- External visibility, for example, joint meeting with the European commission in Brussels and seminar together with the Swedish minister of enterprise.
- Joint events and workshops.

In 2021, KTH invested substantial time and resources to reflect on collaboration, partnerships, and Societal Impact. This was done through:

- External Review of the Strategic Partnerships program.
- External Evaluation of the investment in the role Impact leader.
- Participation of an international accelerator program in the theme strategic partnerships
- Cross panel Societal Impact within the Research Assessment Exercise 2021 (RAE2021).

Activities

Main outcomes

KTH is well-positioned regarding partnerships, however, there are several recommendations on how this position can be kept and strengthened:

- Offer a wider range of partnership programs.
- Continue to engage partners in the development of educational programs.
- Utilise and share Research Infrastructures more together with partners.
- Engage more internationally together with partners.

Support Mechanisms

KTH has five campus locations spread in the greater Stockholm region. All of them have intense collaboration with stakeholders in the close surroundings.

KTH is founding partner and member of the boards of Södertälje Science Park, Flemingsberg science, Stockholm Science City Foundation, Kista Science City, and the Stockholm IT-Region. Those organisations are supporting and facilitating synergies for research and innovation in their respective geographical and subject domain.

The support mechanisms of KTHs strategic partnerships are based on the roles that are designed to run and develop each partnership, i.e., partner directors and partner managers, together with orchestrating and coordinating mechanisms for the program as a whole, i.e., partner director and partner support manager. Each partnership has a steering committee, typically staffed by KTH with 2-4 academics from different parts of the organisation.

Within the framework of the strategic partnerships, regular meetings are held (3-4 times per semester) with partner managers, partner leaders and research platform directors. The deputy president and the director of strategic partnerships are preparing and leading the meetings. There are several purposes for these meetings, but an overall purpose is to develop increased engagement, cohesion, and a culture of partnership where different parts of the university are more strongly connected.

Joint meetings with partner managers are also held regularly, to share good examples in the partnerships on how researchers/teachers and partners can develop and strengthen collaboration.

Linked to the partnerships is also the role of Impact managers in the organisation.

Support Mechanisms

Forum for adjunct faculty

The forum is an arena for dialogue and exchange of experience between KTH's adjunct professors, affiliated faculty and KTH's management about the opportunities to conduct research and get involved in education during the time at KTH, as well as opportunities for other involvement.

For several years, a priority area for partnerships is to be included to a greater extent as a natural part of the university, especially in the line organisation. It should be seen in agendas, plans, resource allocation and follow up.

To achieve this, a number of initiatives and activities have been implemented.

- The role of Impact Manager has been established, a role that aims to support the line organisation to develop impact strategies, implement priority activities and stimulate colleagues to strengthen societal impact through collaboration and partnership.
- BKTH strives for a dynamic staffing of key roles as partner directors and partner managers as well as faculty in the steering committees. The purpose is to broaden experiences and commitment around partnerships in the organisation.
- The deputy president and the director of strategic partnerships are visiting collegial bodies on a regular basis to inform and discuss collaboration and partnerships with the academics.
- Guidelines for Impact cases.
- Intensified dialogue with the head of schools on how to ramp up the engagement in partnerships in the line organisation.
- Establish a Core development team from our exercise during our participation in the international accelerator program to further develop a number of ideas to work more with joint initiatives, missions, and cross-boundary projects.
- Communication efforts on the web, intranet, and other channels to share good practices, learnings, results, and outcomes from partnerships.
- A hashtag is defined: #KTHTogetherForImpact

#KTHTogetherForImpact

Impact and Ecosystems

The Stockholm Region is a knowledge-driven region, with highly ranked and competitive universities and research facilities, a well-educated population, and a knowledge-intensive business community. The region of Stockholm is recurrently highly ranked on international Innovation scoreboards and has a very dynamic innovation ecosystem. KTH is strongly embedded in this system in several ways, not least through all the engineers, architects, and PhDs from KTH that are active in the working life in the region.

KTH has a strong track record of spin-offs/start-ups, many of them supported by KTH Innovation. The operation of KTH Innovation is very early on in the process, in the stage of developing ideas. KTH also has a Holding company (KTH Holding) that can make strategic investments in promising start-up companies based on research or teaching at KTH, with the aim of supporting commercialisation and making it easier for new science to benefit society. KTH Innovation also has strong links to the Incubator STING, recently named the world's best start-up accelerator/incubator.

One example of the Impact of the Innovation Ecosystem of Stockholm is the 33-list, where KTH is directly or indirectly represented in a large portion of the companies. The 33 list is an annual list of 33 prominent young innovation companies in Sweden, which is produced by the editorial staff of the magazines Affärsvärlden and Ny Teknik.

In KTHs Research Assessment Exercises from 2012 and 2021, a large number of Impact cases were gathered. (98 + 106). From the report of RAE2021 "An absolute driving element of the societal impact of research is the high quality of research work linked to the development of new researchers in an environment where they can develop and understanding of societal relevance of needs of their knowledge, and KTH faculty have unquestionably demonstrated excellent performance on that front, with their multi-faceted activities."

Impact and Ecosystems

Some examples of Impacts generated from KTHs strategic partnerships

- MedTechLabs: An interdisciplinary centre for medical technology research that develops diagnostics and better treatments for the most common diseases. The goal is to become among the top 10 interdisciplinary centres worldwide for medical technology research where instruments and methods that will benefit large patient groups is developed.
- ITRL (Integrated Transport Research lab): A multidiscipline and multi-stakeholder research and demonstration arena, responding to global environmental transport challenges. KTHs strategic partners Scania and Ericsson are founding partners.
- Digital Futures: Digital Futures is a cross-disciplinary research centre that explores and develops digital technologies of great societal importance. It was jointly established in 2020 by KTH Royal Institute of Technology, Stockholm University and Research Institutes of Sweden, based on significant long-term support of a Strategic Research Area by the Swedish Government. The mission is to create an international breeding ground to excel in research, empower people by fostering innovation, education, leadership, and entrepreneurial spirit and build a strong community. The overall objective of Digital Futures is to become one of the top five university research centres worldwide in the area of technologies for digital transformation, with tight interactions between academia, industry, and society.
- In 2020, KTH's Scientific Council was established as part of the strategic partnership between KTH and the City of Stockholm. For the public sector, it is important to have a good flow of updated, scientifically based knowledge to meet all the challenges that exist, not least in a growing city.
- In the strategic partnership with the Region Stockholm there are regular calls for funding of joint research between KTH and Region Stockholm, where at least one of the researchers must be employed at the university and one of the regions.

Challenges and Success Factors

One of the major challenges in building a partner-oriented university is perseverance and articulating and communicating the benefits of investing time and resources in structures and processes where the benefits are either far in the future or more at the university-wide level rather than for the individual parts of the organisation.

In the phase of establishment, it is very important that there is anchoring in the top management and that it is the right people who are given relevant conditions to run the work. In KTH's case, a special VP assignment was created for the purpose. This assignment went to a person with a long career and management experience at KTH, accepted by the academy and with an extensive personal network at the management level in the business world. The initiative was taken at the highest level, i.e., the university's board.

KTH has continued to have the strategic partnerships anchored at the highest management level, since 2017 it is the deputy president who orchestrates the partnership program. KTH has been successful to transfer the ownership and engagement in the transition of leadership.

KTH has worked with strategic partnerships since 2011, for more than 10 years. One of the challenges that arises over time is that the pleasure of the news disappears. It is then important to continuously create new energy and commitment within KTH as well as with partners for the further development of the partnerships. It is important to have rotation in the key roles in the partnerships to create renewal and take advantage of skills and commitment over time. In addition, a culture with a positive attitude towards partnership is nurtured.

A success factor is to have clear structures and processes, and rules of the game. At the same time, it should be possible for each partnership to be uniquely based on its conditions. Most of KTH's strategic partners have changed top management several times, but the partnerships remain. It has proven to be much appreciated that KTH has built clear structures and processes for the partnerships.

Even though KTH has worked for a long time with partnerships and involved relatively many people in this, it is still a challenge to engage faculty within KTH and with our strategic partners in the active work. Great emphasis must be placed on internal/external communication around partnerships, to expand knowledge and commitment. To strengthen the communication a summary of the strategic partnerships was developed in 2021: "The past year with KTH's strategic partnerships - Impressions, impacts and forward-looking"

The current pandemic has shown that the relationships through the partnerships not only has survived but have been strengthened with even more interaction and collaboration through our digitalization.

Conclusion and Future Outlook

With experience from more than 10 years of work with partnerships, KTH is well positioned and well equipped to continue to be a partnering university. Our ambition with our strategic partnership program is higher than ever.

KTH will bring the following strengths with it in the future:

- Ownership at the top management.
- Mutual trust.
- Clear structures, processes, and roles.
- Combine top-down and bottom-up.
- Success stories.

Areas that will receive increased attention and investment over the next ten years:

- The international perspective.
- Communication.
- Integration in management- and quality systems.
- Joint initiatives that bring together several partners.
- Dynamic program for partnerships on different levels of engagement.
- A systematic approach for interaction regarding educational programmes.
- Clear incentives for collaboration, partnerships, and societal impact.

No daylight: Redefining partnerships for the future

A unique research agreement brings Mayo physicians and UWEC students together to transform rural healthcare.

Authors: Michael Carney, Timothy Nelson, James Schmidt

Region North America

The partnering university

Mission and Vision

The University of Wisconsin-Eau Claire's (UWEC) 2025 strategic plan sets the goal to "expand nationally distinctive partnership opportunities [that will] provide students with opportunities we cannot achieve alone." Key to that goal is a century-long history of partnerships, invigorated by a collaboration begun in 2017 with Mayo Clinic Health System, NW Wisconsin (MCHS).

The MCHS vision to put the needs of patients first by providing "an unparalleled experience as the most trusted partner for health care" aligns perfectly with the university's goal of serving our students first. What began as an agreement to support joint research between the university and health system, has become a comprehensive collaboration that drives innovation, improved patient care, educational growth, facilities development, and student/staff recruitment. The shared mission to serve patients and students, and a vision to do so collaboratively, is powering new ways of working together, making decisions, and serving our region.

Strategies and Objectives

In June 2017, MCHS and UWEC signed what was then only the second collaborative research agreement in the world between a university and the Mayo Clinic. The agreement facilitates joint research efforts between the two institutions, enabling faculty and students at UWEC to participate in research projects with Mayo physicians and scientists.

While the initial agreement envisioned joint research projects, in the past four years the partnership has become a much more comprehensive collaboration between higher education and a premier healthcare organisation. It has opened doors for academic program development, student recruitment, joint appointments, shared philanthropy, facilities development, educational symposia, community change, and employee recruitment and retention—in addition to the anticipated research outcomes.

Because of the success of this collaboration, the university has focused its strategic vision for 2025 to expand the MCHS relationship to include partnerships that will support an increased focus on health and wellbeing and on the needs of our predominantly rural. This goal was formally adopted by the university and our shared governance groups in 2021 as part of our 2025 strategic plan, calling for distinction in health and wellbeing, a distinction possible only through our strategic partnerships. The goal requires collaborations that:

- foster new academic and co-curricular partnerships that support our bold vision and new learning opportunities;
- identify new philanthropic support and collaborations; and
- Encourage partnerships that intersect health and wellness.

For its part, MCHS has also articulated strategic goals that demonstrate the "no daylight" approach to aligned priorities. The Mayo Clinic strategic plan for a forward 2030 vision includes Cure, Connect, Transform and engagement of staff. Under the pillar of Transform, MCHS has prioritised the UWEC partnership to expand relationships with the community and business leaders to form collaborative teams capable of solving the biggest challenges in rural healthcare. Our strategic plan acknowledges that it takes committed and dedicated partners in order to define the most promising solutions and execute on realizing those solutions collaboratively.

MCHS has dedicated a budget for research and innovation that predominately supports collaborative infrastructure and projects with UWEC. These investments provide engagement opportunities for MCHS staff not possible without UWEC partners, benefiting patients and students alike. The joint commitment to the Biomedical Innovator Program, described in the next section, is a shared, long-term vision to train, recruit and retain the brightest and most qualified nurses and physicians.

Activities

Over the past four years, UWEC and MCHS have developed and continue to expand mutually led and mutually beneficial activities that propel the partnership. They include:

Education

- A jointly funded Biomedical Innovators program annually funds 10 full-tuition, four-year scholarships for high-ability students that connects them to UWEC faculty and MCHS researchers from day one on joint research projects, provides them with opportunities to interact with Mayo physicians, and connects them to pre-professional educational opportunities.
- UWEC faculty and student researchers present to MCHS "Grand Rounds" symposia, sharing research outcomes with Mayo physicians.
- The Mayo Clinic provides guaranteed slots for UWEC students in its Undergraduate Research Employment Program (at MCHS) and Summer Undergraduate Research Fellowship (at Mayo Rochester).
- UWEC has partnered with MCHS to develop programs that support health needs in our region, including the introduction of a new curriculum and programs in Public Health, Echocardiography, Biomedical 3-D printing, Masters programs in Exercise Physiology and Nurse Education, an MBA track in Healthcare Management and a Doctor of Nursing Practice track in Psychiatry/Mental Health, as well as executive training programs for MCHS healthcare employees.

Research

- Currently the partnership funds two dozen active collaborative research projects totaling nearly $500,000. All include UWEC faculty, undergraduate students and MCHS physician researchers. Projects span disciplines including Biology, Chemistry, Nursing, Information Systems, Psychology, Materials Science & Biomedical Engineering, Mathematics, Languages, Kinesiology and Computer Science. The primary goal is to improve patient outcomes.

Activities

commercialisation

- The partnership recently received a $9.4 million grant from the state of Wisconsin to develop, pilot and test a new model of patient care that will involve the creation of "care coach" positions to improve rural health care delivery, reimagining the clinical nursing curriculum to educate and graduate more nurses, and the implementation of innovation curriculum to provide students and regional business owners with skills to adjust and pivot as future challenges arise.
- An example of the innovative joint research projects includes that led by Professor of Kinesiology Dr. Jeff Janot who partnered with MCHS to study the best way for police officers to carry their equipment, which can often weigh up to 30 pounds (13.6 kilograms). Assisted by student researchers, the project developed a new vest model that is being used by the local police force, has been shared across Wisconsin, and is receiving requests from law enforcement groups around the United States.

Governance

- From the beginning, the leaders of the two institutions have articulated a vision that positions the collaboration as the key driver for the advancement and transformation of both institutions. Both believe the partnership can provide the university with a national reputation in undergraduate research and pre-med programming, and MCHS with revolutionized patient care through research and education.
- UWEC has newly created an Assistant Chancellor for Partnerships to oversee the expansion of all collaborations as articulated in the strategic plan. MCHS appointed a UWEC alum to spearhead efforts on behalf of the partnership.
- A council of leadership representatives from both organisations meets quarterly to identify new opportunities and ensure the partnership continues to meet the needs of both institutions.
- The Research Innovation Council connects researchers at both institutions, reviews research proposals, and awards funding.

Support Mechanisms

For more than 100 years, UWEC has been a hub for community collaboration with regional government, area businesses and healthcare and educational institutions. We produce the majority of our region's nurses, educators, and business leaders. The experiences that define our student experience are anchored in our partner relationships: 100% complete community engagement activities toward their degree, 62% of our students participate in internships, and 39% do undergraduate research during their UWEC careers. In 2016 we were named the leading institution in the United States for undergraduate research.

Partnering is not new at UW-Eau Claire. The campus-wide culture of outreach and collaboration is baked in. For example, the MCHS collaboration is supported by UWEC's Office of Research and Sponsored Programs that annually provides almost $1 million in project funding and grant writing support to faculty and student researchers across all disciplines and that has helped to connect UWEC and MCHS initiatives. That infrastructure is amplified by annual MCHS investments of more than $1.5 million in personnel for research support.

At UWEC we actively encourage faculty to engage in research with undergraduate students. An annual week-long research celebration, now in its 30th year, features hundreds of posters and presentations, open to the public. Creative approaches to connecting faculty with external collaborators include "Idea Incubator" events which bring UWEC faculty and MCHS physicians and scientists together to explore joint projects. Annual university awards for excellence in faculty scholarship and research mentoring underscore the institutional commitment to collaborative efforts.

The new Assistant Chancellor for Partnerships, reporting directly to the Chancellor, is a co-lead for the partnership. This position signals the importance that the university places on our partnerships, charging the Assistant Chancellor to both grow the relationship with MCHS and to identify additional opportunities that enhance the educational experience for students and the reputation of the university.

UWEC was also a founding partner with WiSys, in the creation of its first VentureHome location near our campus. A network of start-up hubs across Wisconsin, VentureHome connects entrepreneurs with university resources and WiSys commercialisation expertise.

Partnering is most effective when there is "no daylight" between partners—physically as well as strategically. UWEC's planned new Science and Health Sciences Building, slated for completion in 2026, will feature embedded "innovation hubs" on each floor of the building, financed and staffed by MCHS to facilitate new ideas and new collaborations. A $13.7 million contribution by MCHS will provide them with 10,000 square feet of space in the new building. This is supported by joint fund-raising between the two organisations. Both are at the table as the building is being designed and built.

Impact and Ecosystem

The UWEC/MCHS partnership has produced immediate outcomes that include:

- Recruitment of more high-ability students through scholarships and health-related programming, including the Biomedical Innovator program. Current applications by high-ability students are up by 16% this year. Our goal is to attract and train more healthcare professionals who will then remain in our region.
- Recruitment of top talent to MCHS by offering research opportunities and access to UW-Eau Claire's high-performance computing hub.
- Research outcomes that are impacting patient care. This includes the police vest project outlined above, as well as research on a clinical foam that protects cancer patients from damaging healthy tissue during treatment. The research, involving UWEC faculty and students was shared with MCHS physicians and won the students a WiSys state-wide innovation award in 2020.

Over the long-term, partnering with MCHS will see significant tangible and intangible outcomes.

- The projected $13.7 million investment in the university's new health and health science building by MCHS will transform the university's teaching and research footprint and ability to provide cutting-edge learning for the future. MCHS's integration into the building through its innovation hubs will make possible new synergies as MCHS physician-researchers are able to connect directly with UWEC faculty and students and seek new approaches that will directly impact patient care throughout the region.
- In 2021, the Governor of Wisconsin awarded UWEC a $9.4 million grant to support workforce innovation in northwest Wisconsin. Central to that grant is a collaboration with MCHS to train more nurses, improve nurse education, pilot new models to improve rural healthcare delivery and launch six new high-skill, health-related degree programs. This grant not only leverages the existing partnership with MCHS, but it also brings together the expertise of WiSys VentureHome and UWEC's Small Business Development Centre to further extend the university's outreach to regional entrepreneurs and small business owners.

This highly competitive grant was possible only because of the existing, high-functioning partnership already in place with MCHS. Envisioned and completed within only four weeks, the grant was successful because MCHS and UWEC have worked together so closely for four years. We meet regularly and keep innovation at the top of our priorities. Our goals are aligned, to serve our students and improve patient care. Our commitment to expanding degree programs that benefit students and MCHS was already in place. Our network of relationships with regional communities and WiSys enabled us to create a coalition quickly with willing partners. In short, transformative partnerships not only spark new opportunities, but they also attract new partners as well.

Challenges and Success Factors

The COVID pandemic has posed significant challenges to effective partnering. A long-running student research competition hosted with MCHS was cancelled when COVID curtailed the gathering. Programs to provide the Biomedical Innovators with on-site professional development opportunities stalled in its inaugural year as hospitals and the university locked down. Faculty and MCHS physician-researchers were overtaken by pandemic-focused demands.

Despite these challenges, the relationships that are foundational to the partnership made possible new opportunities. Early in the pandemic, UWEC and MCHS collaborated on an app that would enable students to monitor their health and find options for care. Rolled out to 10,000 students and 1,200 employees, the "Blugold Protocol" helped the university avoid major outbreaks and complete 2021 with in-person instruction. The new app is now being repurposed for the "care coach" pilot as part of the workforce innovation grant.

As the pandemic ground on, UWEC and MCHS employees came together (virtually) to share their stories of battling the pandemic and finding strength. This produced a series of "Healing Reflections" murals created by writers and artists at both institutions. This was an unexpected and rewarding creative collaboration.

Another challenge that the partnership has faced has been fostering nimble innovation between two large and often inflexible institutions. Plans to seek joint appointments across both institutions stumbled as administrative red tape slowed the process. Programs to involve students in hospital settings faced patient confidentiality regulations. All these hurdles are still being addressed, more slowly than either partner would like. However, from the start, the partnership leaders agreed that there would be "no daylight" between the two in their vision for what could be accomplished together. Both have worked to remove barriers and to instill a spirit of change in the partnership. "Say 'yes' and solve problems as they arise" has become the mantra for the collaboration.

Finally, while financial concerns influence every partnership, the willingness of both partners to invest directly in the collaboration – and to provide staff to support it – has helped to keep the momentum going. That investment helped to ensure a partnership that was ready to seize the opportunity of the state-wide workforce innovation grant to infuse major funding for the future. The continued meetings, grappling with institutional barriers and gained trust are foundational to new opportunities.

Conclusion and Future Outlook

UWEC's history of collaboration has prepared it for a truly transformation partnership with MCHS. The partners have "no daylight" between their shared mission and vision. The collaboration is led by visionaries and individuals committed to the hard work of finding joint solutions. It is supported by investments of money, time, and resources from both partners. It thrives on innovation, believing that students and patients are best served with the best ideas. It continues to say "yes" to opportunities.

The Mayo partnership is helping the university embrace additional partners from local communities to entrepreneurial networks. The new workforce innovation grant will forge new connections with regional communities, continue to build creative capacity for both partners, and build a foundation of academic programs that will create talent pipelines for UWEC and MCHS. The lessons and benefits to partnering continue.

Uncommon university: A case of Pan-Atlantic University, Nigeria

The Pan-Atlantic University thrives on partnerships with deep commitment as a societal change agent.

Authors: Peter Bamkole, Adeola Alafia, Stanley Ibeku

Region: Africa

The partnering university

Mission and Vision

The Mission statement of the Pan-Atlantic University (PAU) is: "to form competent and committed professionals and encourage them to serve with personal initiative and social responsibility in the community in which they work, thereby helping to build a better society in Nigeria and Africa at large." This encapsulates the purpose of the University.

The University is also committed to the development of entrepreneurship internally and across Nigeria in general. This is done intentionally through practical applications of learning and broad stakeholder engagement by the University's Enterprise Development Centre (EDC) which was established in 2003. EDC's mission is to build a network of entrepreneurial leaders through its commitment to continuous learning, process improvement and business integrity. It provides a holistic approach to enterprise development service largely to small and growing businesses and to students (undergraduates and postgraduates) within the university community (www.edc.edu.ng).

Strategies and Objectives

Pan-Atlantic University is deliberate in its commitment to being a partnering institution as encapsulated in its strategic plan which centers on infrastructure and program development through partnerships with both private and public institutions. The strategy and objectives are centered on five key pillars: teaching & learning, research & scholarship, infrastructure, people & culture, and community engagement. These pillars set the university apart from other institutions in delivering an integrated and inclusive educational experience through outcome-based learning while collaborating and co-creating with the industry.

In terms of infrastructural development, Pan-Atlantic University has been largely developed through the commitment and support of the Business community in and outside Nigeria. The University was built on the pillar of strong industry partnerships across all its schools and centers. Leading the University's effort on partnerships is EDC with 80% of its programs/interventions being co-created/supported by a vast array of stakeholders nationally and internationally. The Business School of the University continues to be the first option for the business community either in supporting infrastructural development, endowing chairs, or sponsoring programs. Lagos Business School and the University also collaborate with industry, through the annual talent fair and the undergraduates' industrial attachment. The School of Media and Communication also works very closely with "Nollywood" – the Nigerian Movie industry.

As part of its commitment to being an entrepreneurial University, all undergraduate students take a compulsory one-year entrepreneurship course, which is akin to running a business on campus. These ventures are showcased at the end of their second year to parents and our wider community. To further foster this entrepreneurial spirit, an entrepreneurship award is given at every graduation ceremony to a deserving student.

Beyond teaching and bringing entrepreneurship alive on campus, the University (represented by EDC's Director) worked with our regulator – the National Universities Commission (NUC) to review the entrepreneurship curriculum in Nigerian Universities and worked with the Federal Government's Apex Agency – Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) in the areas of policy development and entrepreneurship adoption across Nigeria.

On community engagement, the University encourages its various schools and class cohorts to get involved in community development which is being used as part of their "alumni performance" rating. This community engagement was more profound during the pandemic, which saw schools and clinics being renovated, and palliatives being distributed to the less privileged in our society.

Activities

The university is leveraging partnerships to advance entrepreneurship and innovation and is deliberate in its approach to building an entrepreneurial mindset across the University and the society.

In terms of education, PAU has been at the forefront of advancing entrepreneurship and innovative education through various interventions. The University, through its enterprise development centre, organised periodic workshops for Directors of EDCs across Nigerian universities on how enterprise education could be embedded in our universities based on its experience spanning almost two decades. This was in collaboration with the National Universities Commission (NUC) and Nigeria Economic Summit Group.

The School of Media and Communications (SMC) of the University is the education partner for Multichoice Talent Factory in Nigeria and equally partnered with Access Bank in building the capacity of those in the entertainment sector. The Lagos Business School Sustainability Centre is in its 3rd year of partnering with ACT Foundation to train business owners in sustainable waste management.

Through EDC, the University partnered with SMEDAN to train and certify business development consultants working with start-ups and small businesses. Similarly, it also partnered with the Bank of Industry and the Central Bank of Nigeria in training small businesses to access capital.

The University has deep experience building the capacity of women in business through its collaboration with the World Bank on the "Women X" project. The University was also the academic and implementation partner for Nigeria and Liberia under the Goldman Sachs "10,000 Women" initiative, the "Women-in-Tech" program with Standard Chartered Bank, Nigeria, and the financial literacy program "Road-to-Growth" with Cherie Blair Foundation for Women. These programs have spanned more than 15 years.

Our partnerships on capacity-building are typically for the long haul. Our partnership with Oxfam Novib, focusing on social impact and circularity, is in its 7th year. That with Diamond Bank (now Access Bank) ran for 10 years and is now being re-imagined. That with The Coca-Cola Africa Foundation through the Africa-America Institute focusing on non-profits ran for 5 years. In order to deepen and increase access to entrepreneurship education, The Mastercard Foundation in partnership with the EDC launched the Transforming Nigerian Youth program aimed at creating a network of entrepreneurial leaders for employment creation. The 5-year program offers free online training to 200,000 youths aged 18-35years and business support to 10,000 of them. In other to be inclusive, there is also provision for learners who are unable to connect using the internet (or smartphone), to learn on the regular feature phone, using the interactive voice response (IVR).

Activities

In the area of research, the University, through Lagos Business School (LSB) partnered with Bill & Melinda Gates Foundation in using evidence-based research to promote sustainable and inclusive digital financial services. LBS Sustainability Centre partnered with Ford Foundation through an endowed chair to research youth leadership and provide an annual fellowship. The School of Science and Technology's is conducting exploratory research into the politics of energy transitions in African Countries. (Part of a Consortium funded by UK research & innovation Global challenges research fund).

EDC's focus was on small businesses through its research on the study assessing the financing gaps of MSMEs in Nigeria with Development Bank of Nigeria, loan terms that negatively impact small business working capital cycles and profitability in Nigeria in partnership with Sparkle Microfinance Bank, and the Green Economy Ecosystem Mapping through its partnership with Nigeria Climate Innovation Centre.

In Governance, the University continues to be a core member of the academia-industry partnership at the Society for Corporate Governance, Nigeria, of which several of PAU's top leadership are fellows.

Support Mechanisms

Support mechanisms are an important consideration in the university's commitment towards partnering with the industry and the development of an entrepreneurial and innovative culture.

In the development of its infrastructure, the University named buildings, rooms, and spaces after its donors. The has been a strong motivation for the business community, alumni, and those wishing to preserve legacies. T.Y. Danjuma donated the administrative building at the main campus, which was named after him, while the International Management Research Centre (IMRC) at LBS was named after Gamaliel Onosode following a generous donation by his family after his death. Programs are equally named after sponsors, especially for multi-year programs such as OXFAM Novib "Work-in-Progress," Goldman Sachs 10,000 women program, and Mastercard Foundation's Transforming Nigerian Youth program. This gives the sponsors visibility and 'bragging rights'. These are important sections of their various reports.

On entrepreneurship and innovation, the University instituted an annual entrepreneurship award that is aimed at spurring venture creation among students. This is apart from the annual EXPO during which second-year students showcase their ventures to their parents and the university community. Profits from these student businesses are aggregated and used by the students to fund their community intervention programs.

Outside the university community, the university uses competitions to cultivate and harvest innovations. Examples of these include Agrohack (innovations in Agriculture), Creative Business Cup (Innovations in the creative sector) and National Enterprise Challenge (any sector but for youths 18-35 years age bracket).

The university also supports venture growth through its pool of mentors and experts in residence. This certificate programme at EDC is part of the complimentary support given to small businesses. In addition, the MBA students at LBS, as part of their credit course provides 100 hours of consulting services to EDC's small businesses.

To deepen its commitment to innovation and entrepreneurship, the University's Governing Council approved the construction of an "Innovation Hub" that will serve both the university community as well as be a platform for harvesting grass-root innovation outside the university system. The Innovation Hub is currently at the design stage and is expected to promote ideas harvesting and solution-driven innovation, provide access to rapid prototyping, support venture creation across the entire value chain, and encourage stakeholders' collaboration and knowledge sharing. The hub is also expected to provide start-ups with extensive networking opportunities.

Impact and Ecosystem

The University understands that the development of a vibrant ecosystem is central to achieving its own mission. Consequently, every school and center within the university ensures that they are core members of their various ecosystems. LBS for instance, through its monthly breakfast meetings have developed a vibrant network of CEO that are leading private and public sector institutions. A member of the faculty leading this network is now the chief economic adviser to the President of the Federal Republic of Nigeria. LBS and EDC are strong members of the Nigerian Circularity ecosystem where they lead in capacity building, research, and advocacy.

The School of Media and Communications brings academic content and rigor to various interventions in the creative industry such as the Multichoice Talent Factory and the Film Makers Forum. Its Nollywood Studies Centre continues to engage in research and publication that enriches the creative sector. The School of Science and Technology (SST) though just a few years old is already making its impact in the energy efficiency space. The school is the Nigerian partner lead in an international research consortium. Faculty members in SST lead various committees of the Nigerian Society of Engineers and/or other professional bodies.

In the area of entrepreneurship, the Enterprise Development Centre of the university is squarely embedded across all verticals in the Nigerian entrepreneurship ecosystem. EDC worked with the Ministry of Industry, Trade, and Investment to deliver favourable policies for small businesses. This includes simplification of the business registration process and amount, reduction of taxes by small businesses, and the creation of "Market Access Nigeria" – a platform that brought large and small businesses together for supply chain integration.

EDC also worked with Financial Institutions to research and articulate access to capital challenges by small businesses. The opportunity to attend the annual retreat of the Bankers Committee as a guest speaker /panelist provided a platform to advocate for small businesses. So, when the Central Bank of Nigeria intervened by providing access to capital for the small businesses, EDC became one of the accredited training institutions building the capacity of small businesses prior to accessing capital under their various interventions.

© Pan-Atlantic University

Impact and Ecosystem

To standardise the quality of consultants working with small businesses, the University through EDC partnered with the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) to articulate the knowledge, skills, and competencies that a business development consultant working with small businesses must-have. EDC then became one of the two accredited training institutions in Nigeria to train these consultants. EDC is also a member of the accrediting body set up by SMEDAN.

In the last two years, the Director of EDC, Pan-Atlantic University has chaired the network of directors of enterprise development centers across Nigerian Universities. Under the direction of the National Universities Commission, the network organises national enterprise challenges for students, capacity building for the directors and staff of the various enterprise centres, periodic meetings on knowledge exchange, and annual conferences. This has in no small way strengthened the collaboration among the various universities.

Our Impact in numbers includes:

- Designing and implementing with the World Bank and the Federal Government of Nigeria, the largest business planning competition in Nigeria, processing over 200,000 applications over a period of three years.
- Designing and deploying an e-learning management system that has enabled to train over 70,000 youths in two years. This was made possible through our partnership with the Mastercard Foundation.
- During the pandemic, about 600 business owners were trained (online) under the Central Bank of Nigeria's "Agri-Business Small and Medium Enterprises Investment Scheme" (CBN-AGSMEIS). A significant number of them accessed the capital.

Challenges and Success Factors

Success factors

- The University, its various schools and centres leverage on the Lagos Business School's brand which has attained international accreditation – The Association of MBAs (AMBA) and the Association of Advance Collegiate Schools of Business (AACSB). In addition, LBS is a member of Graduate management Admission Council (GMAC) and several international organisations.
- On quality, the University is known for delivering top-notch quality on all its commitments to partners, beneficiaries, and society; this has become an attractive value proposition for the university. In Q4, 2021, LBS became the first academic institution to be ISO-9001:2015 certified. This has increased the university's visibility and commitment to quality management systems.
- The university has demonstrated over the years to individuals and organisations that whatever donation that was made to the university, it will be utilised judiciously. Thus, building a sense of trust and "value for money." This has positioned the university to continuously attract partners /donors, based on their historical experiences with us. They know that we never cut corners.

Challenges

- Partners' Expectation, especially for new partners has been challenging of late. Dwindling resources seem to be a major reason while the cost of delivering quality output has gone up. As we never compromise on our quality standards, some new partners often see us as expensive. Other times, partners want to extract more value than it is contained in our memorandum of understanding (MoU).
- We have been able to mitigate this by engaging new partners on our value system, how we do things and why. In addition, each partner's responsibilities are not only well defined but also clearly explained prior to signing the MoU. This has enabled us to reduce this challenge to the minimum. In some cases, we have also been creative in packaging programs for our partners. For example, instead of a residential program in Lagos, we go to the regions ourselves so that only the facilitators are accommodated. That cuts down significantly on logistics and accommodation by as much as one-third in some cases. Offering blended learning could further cut down cost of intervention.

These are some of the ways in which we have proactively managed these challenges.

Conclusion and Future Outlook

The University understands from experience that partnering with the industry, government and multilateral institutions is critical to its growth and relevance. To further deepen its partnership with these entities, the outputs of such collaboration must be value-driven. This also means that the application of such outputs must be immediate. This is how relevance and impact will be maintained.

The commencement of our Innovation hub would radically deepen our community engagement and potential spin-offs for venture creation. It will also be a great platform for attracting experts to campus to coach and mentor student innovators. The innovation hub will also foster student collaboration across disciplines as they solve locally relevant problems.

Strathclyde Inspire- A catalyst For entrepreneurship

Strathclyde Inspire is a statement of our commitment to be a world-leading enabler of entrepreneurship.

Authors: Fiona Ireland, Olga Kozlova

Region: Europe

The entrepreneurial and innovative university

Mission and Vision

Strathclyde Inspire will drive transformational change in our support for innovation, entrepreneurship, and commercialisation. Our sector-leading Entrepreneurship Strategy will unlock the entrepreneurial aspirations of all Strathclyde innovators and entrepreneurs and will create an environment in which venture creation & growth multiplies and thrives.

An emphasis on development of entrepreneurial mindsets is a key feature of our Strategic Plan to 2025. Building on our strong socially progressive ethos to support the next generation of entrepreneurs, whatever their background, sector or ambition, entrepreneurial learning complements the University's leading role in promoting fair work and inclusive growth.

Strathclyde Inspire, the Entrepreneurship Strategy 2020-2025, will position the University of Strathclyde as the partner of choice for entrepreneurial students, innovators, founders, and business leaders at every stage of the entrepreneurial journey.

Strategies and Objectives

Strathclyde Inspire is the first dedicated entrepreneurship strategy at any Scottish university and embeds a pioneering 'Entrepreneurship for All' approach. We are challenging both staff and students to grab opportunities, get involved with entrepreneurship and develop an entrepreneurial mindset, enabling them to thrive whatever their situation or ambition.

Our objective is to provide support at every stage of the entrepreneurial journey, whether our staff and students wish to explore their entrepreneurial potential, set up or grow a business, or are considering commercialising their research via another route, for example, licensing.

Our ambitions will be delivered through four strategic goals:

1. **Developing entrepreneurial mindsets:** position entrepreneurship as something for everyone and ensure every Strathclyde student and staff member is provided with opportunities to develop an entrepreneurial mindset through participation in a range of entrepreneurship opportunities.
2. **Identifying & supporting entrepreneurial talent:** ensure that emerging entrepreneurs and innovators have a high awareness of the practical entrepreneurship support available and a clear understanding of the easily accessible entry points into Strathclyde Inspire.
3. **Empowering entrepreneurs:** All our innovation-led opportunities will have access to an unrivaled package of support at the heart of Scotland's first innovation district, accelerating them towards investment and growth.
4. **Scaling innovation-driven enterprises:** By addressing the early-stage funding gap through a significant expansion of our investment capabilities and ensuring access to University innovation services, we will create the environment needed for fast-growing businesses to thrive.

Strathclyde Inspire will be underpinned by three cross-cutting initiatives:

1. **Entrepreneurship Hub:** The ongoing development of the University's Technology and Innovation Zone will see the launch of a state-of-the-art Entrepreneurship Hub at the heart of Scotland's first innovation district, Glasgow City Innovation District (GCID).
2. **Blended Events Programme:** A diverse programme of face-to-face and online events will engage entrepreneurs at all stages of the journey, providing entrepreneurs with opportunities for learning, networking, collaborating, and profile-raising and promote an awareness of and celebrating of Strathclyde Inspire.
3. **Global Supporter Network:** Strathclyde Inspire will supercharge our pool of experienced entrepreneurs and experts, and leverage digital assets, to cultivate a global supporter network that will provide strategic input, specialist advice and access to markets, encouraging and supporting the next generation of Strathclyde entrepreneurs.

Activities

At Strathclyde, we believe entrepreneurship is so more than starting and growing a business. It's a mind-set that's accessible to everyone and is therefore something that can be embedded within education for both students and staff.

To develop entrepreneurial mindsets, we:

- have committed to ensuring that by 2025, every Strathclyde student and staff member is provided with access to a range of entrepreneurial learning opportunities;
- are offering a portfolio of 'unlocking' opportunities including access: to a virtual training development tool to enhance entrepreneurial skills; ideation workshops; a suite of credit-bearing entrepreneurship modules; an entrepreneurship module, compulsory for all first-year business school students. The number of students taking entrepreneurship education has increased from 415 in 2019/2020 to 865 in 2021/2022;
- Are developing an Entrepreneurship MOOC and a suite of entrepreneurship CPD opportunities for staff.

To identify and encourage entrepreneurial talent, we:

• will embed entrepreneurship ambassadors in every department across the University;

• are providing students and alumni with access to our online Start-up platform, where entrepreneurs can develop their ideas whilst being supported through the practical steps of creating a business action plan. Our Start-up Advisors will provide identified talent with dedicated support. The programme also includes the opportunity to apply for Start-up funding (£500-£1K grant). Before the COVID19-pandemic we had, on average, 22 new Startups per annum; and

• are maximising the potential of our commercial opportunities through appropriate intellectual property protection and effective use of the University stage-gated process, which harnesses insight and support from experienced panelists and provides a platform for reviewing and challenging opportunities as they progress to license deals or spin-out company formations. We doubled the number of spinouts formed in 2020/21 to 6, from an average of 3 per annum in previous years.

Activities

To empower entrepreneurs, we:

- are delivering a competitive investor-ready accelerator programme;
- provide access to £5K grant funding;
- provide access to Strathclyde's global network of experienced entrepreneurs and supporters;
- have a Virtual Board: we help our early-stage entrepreneurs access the board expertise of our network of Entrepreneurial Partners, ensuring they relate to trusted mentors;
- offer inviting incubator/accelerator space to help entrepreneurs build peer relationships and have space to concentrate on building their venture;
- offer multiple opportunities for entrepreneurs to practice pitching, to receive feedback and to prepare for the real deal;
- have been investing in early-stage companies with strong Strathclyde connections since 2012. We have pump-primed our ability to address the early-stage funding gap through the development of two targeted investment funds;
    - Strathclyde Inspire Entrepreneurs Fund (SIEF): bridges the early-stage funding gap to pre-revenue businesses by providing investments of up to £100k alongside third-party, lead investors to University-related enterprises. SIEF currently has a portfolio of 13 active investments and leverages £10 for every £1 it invests into companies. We aim to double the number of entrepreneurs supported by SIEF to 25. Strathclyde had a successful exit from its first spin-in company, Orthosensor, in January 2021. The University Court and Enterprise and Investment Committee (EIC) approved £500k from the commercial exit proceeds to top-up the SIEF pot, ensuring gains from commercialisation and investment success would be re-invested back into SIEF.
    - Strathclyde Inspire Investment Fund: this Fund is aimed at later-stage businesses typically raising seed or Series A investments. Investments are typically between £100k-£400k as part of funding rounds led by established 3rd party lead investors, with the ability for follow-in investments up to approximately £1m per company.

Our activities are underpinned by research undertaken by the Hunter Centre for Entrepreneurship, one of the largest groupings of entrepreneurship researchers, educators, and policy influencers in Europe.

Support Mechanisms

The development and delivery of Strathclyde Inspire is supported by a group of entrepreneurial leaders (Senior Enterprise Fellows) and is governed by a prestigious Steering Group, chaired by the University Principal, Sir Jim McDonald, and attended by the Chief Commercial Officer and Associate Principals for Entrepreneurship & Education and Research & Innovation. The group meets quarterly and is tasked with monitoring progress, reviewing risks, and making strategic decisions.

Professor Eleanor Shaw, Associate Principal within the Hunter Centre for Entrepreneurship, is a member of the Strathclyde Inspire Steering Group and has recently been awarded an Order of the British Empire (OBE) for services to entrepreneurship and education. Professor Shaw has more than 25 years' experience in delivering entrepreneurship education around the world and has helped transform the University of Strathclyde's approach to entrepreneurial teaching, research, and innovation to drive inclusive economic growth in Scotland and the UK. Her ethos of 'entrepreneurship for all' has been adopted throughout the University and has led to the establishment of a University of Strathclyde Entrepreneurship for All (E4A) Working Group, chaired by Professor Shaw.

The Entrepreneurship for All Working Group is a collective of representatives from across Strathclyde's various professional service departments and all four faculties. It is committed to opening up entrepreneurship for all. The group meets every two weeks to agree priorities and works together to embed new entrepreneurial opportunities for Strathclyde staff, students, and alumni. To ensure that all new staff joining the University are aware of the importance placed on entrepreneurship, an overview of entrepreneurship at the University of Strathclyde is now included in the new staff induction.

Furthermore, recognising the University's strength in knowledge exchange activity and the increasing importance of such activity going forward, a new career path for knowledge exchange professionals has been introduced. This career path has been articulated through the establishment of the new Knowledge Exchange staff category. It is the first new staff category to be introduced since the 2006 and is innovative within the higher education sector, being the first of its kind in the UK. The Knowledge Exchange staff category opens a career path that allows University staff to concentrate on working with business and industry.

Support Mechanisms

Finally, we have developed an innovative Intellectual Property & Commercialisation Policy, which:

- provides guidance on the early identification of intellectual property;
- identifies the appropriate protection strategy; and
- where relevant, develops the effective route to exploitation, actively supporting both the creation and growth of Spinout companies and commercial licensing based on the intellectual assets of its employees and postgraduate research students.

Extensive work was undertaken when preparing the Intellectual Property & Commercialisation Policy to ensure that the document was consistent with Strathclyde's entrepreneurial culture and is seen as enabling the Strathclyde Inspire goals. The Policy includes provision for both strong academic oversight and engagement while providing additional information on the support available.

Impact and Ecosystem

Strathclyde Inspire does not work in isolation but connects with our global alumni community, our local entrepreneurial ecosystem, our industry partners, and our international investor networks.

The University's role as the anchor institution for Scotland's first innovation district - Glasgow City Innovation District (GCID) - provides us with a platform for delivering a step-change in our entrepreneurship offering. GCID is one of the most advanced innovation ecosystems in Europe, boasting a network of more than 1,600 businesses working side-by-side. It continues to attract partner co-location and investment and nurtures new start-ups and established businesses which, in turn, generates inclusive, sustainable & socially responsible growth for Glasgow and Scotland. Businesses that have established and scaled their operations within GCID include AND Digital (Fintech), Adimo (eCommerce), Dxcover (Health-Tech), TravelTek (Travel-Tech), Edify (VR) and M Squared (Quantum).

A second innovation district - the Advanced Manufacturing Innovation District Scotland (AMIDS) - sees Strathclyde as the anchor University for the National Manufacturing Institute Scotland, an industry-led international center of manufacturing expertise. The institute is a place where industry, academia, and the public sector work together on ground-breaking manufacturing research to transform productivity levels, making companies more competitive and boosting the skills of Scotland's current and future workforce.

Our strategic involvement and investment in both GCID and AMIDS present opportunities for increased reach and impact. By engaging with entrepreneurs located across GCID and AMIDS, Strathclyde Inspire will contribute to a growing community of innovators, entrepreneurs, and investors keen to collaborate and learn from one another. We will work with partners across these innovation districts to contribute to useful engagement and activity focused on the start-up and growth of more innovation-driven ventures, which can scale at speed.

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Impact and Ecosystem

Over the last 30 years, Strathclyde has formed more than 60 spin-out companies, with a cumulative annual turnover of £150m, employing around 1,000 people. 90% of our spinouts have traded for 3 or more years and the University has supported more than 200 start-ups. We currently have 118 businesses in our start-up pipeline and 99 opportunities in our commercial pipeline. 71% of these businesses are aligned with the United Nation's 17 Sustainable Development Goals.

Furthermore, our academic entrepreneurs routinely explore how their research can be exploited to address important local and global challenges.

Smarter Grid Solutions (SGS) is one of Strathclyde's most successful and innovative spinouts. SGS has transformed active network management of electricity grids across the UK and globally as the energy sector transitions to low-carbon power sources. Since the company was spun out from the University in 2008, its products have reduced carbon dioxide emissions by two million tonnes, the equivalent of taking 165,000 combustion engine vehicles off the road.

SGS recently completed a sale to Mitsubishi Electric Power Products, Inc. (MEPPI) a subsidiary of Japanese industrial giant Mitsubishi Electric Corporation (MELCO), meaning the company will be able to further scale up its contribution to tackling the climate emergency. The benefits of the largest ever successful multimillion-pound exit for the University from SGS will be utilised to build resource support in our investment function. It will enable early-stage funding support and attract and engage more focused innovative opportunities for investments into high-potential companies started by our students, staff, and alumni.

Our student and alumni entrepreneurs also contribute through their innovations and entrepreneurial can-do attitude. Present Pal is a communication tool founded by a University of Strathclyde graduate. It is designed for classroom, university, and workplace settings to enable individuals with specific learning disabilities to deliver presentations with greater confidence. Present Pal is now being used to support students in over 100 UK universities through the Disabled Students' Allowances (DSA).

Challenges and Success Factors

The COVID-19 pandemic has brought with it challenges and opportunities for Strathclyde Inspire.

Our main constraint, at present, is the ongoing requirement for strict physical distancing measures. The inability to bring emerging entrepreneurs together to build confidence and networks has had a major impact on our pipeline. We have seen significantly less people taking the step to become their own boss. While online support and activities do provide an alternative, it is no substitute for face-to-face interaction.

Despite these challenges, Strathclyde Inspire has continued to successfully build upon the University's rich and proud history of innovation and entrepreneurship. Consistently ranked in the UK top 5 for company creation activity; home to the world-renowned Hunter Centre for Entrepreneurship; and the recipient of several high-profile awards recognising our commitment to entrepreneurship, the University of Strathclyde has a solid reputation as a leading provider of entrepreneurship education and practice.

Building on this experience and embracing our "unconventional institutional mindset" (as observed by the judges of the Times Higher Education University of the Year award), our bold and ambitious, university-wide Entrepreneurship Strategy sets a distinctive role for the University of Strathclyde in the delivery of entrepreneurship education and practice. In so doing, Strathclyde Inspire will help to build one of the most comprehensive entrepreneurial ecosystems in Europe.

Strathclyde Inspire will contribute to the UK Government's ambition to make 'the UK the very best place in the world to be a researcher, inventor or innovator. We are continuing to invest in our entrepreneurial activity and recently expanded the IP & Commercialisation team from 2 to 6 persons. Four members of the University's senior leadership team are actively involved in Strathclyde Inspire, including the University Principal, Sir Jim McDonald, and Professor Eleanor Shaw, who was recently awarded an OBE for services to entrepreneurship and education.

Challenges and Success Factors

Most recently, the University received a landmark donation of £50m from alumnus and entrepreneur Dr. Charles Huang. The gift is set to make a significant contribution to the delivery of our entrepreneurship strategy. £30m will support the construction of a new building named after Dr. Huang in the University's Technology and Innovation Zone (TIC) located in the heart of Glasgow City Innovation District. This new building will house a new, state-of-the-art Entrepreneurship Hub, which will be the focal point of Strathclyde Inspire on our campus. Another share of the gift will directly support the next generation of Strathclyde entrepreneurs through the creation of the 'Stephen Young Entrepreneurship Awards.'

Building on more than 200 years of 'useful learning', the University of Strathclyde is committed to continuing our track record of supporting innovation, entrepreneurship, and commercialisation, creating opportunities for every member of our university community.

Strathclyde Inspire is a statement of our ongoing commitment to becoming a world-leading enabler of entrepreneurship, and a globally recognised provider of impactful entrepreneurship education and practice.

Conclusion and Future Outlook

The University of Strathclyde started life as a place of useful learning, an institution that wanted to make a difference; this founding mission has never been more relevant. Today, we continue to nurture generations of influencers, innovators, and industry leaders, empowering our staff, students, and alumni to embrace entrepreneurship, transforming their own lives and the lives of others.

Strathclyde Inspire, our Entrepreneurship Strategy 2020-2025, embodies our entrepreneurial spirit and will help our students and staff realise their creativity and ambition, empowering them to make an impact on the world around them. Looking ahead, we will continue to fast-track entrepreneurs, introducing them to wider entrepreneurial support networks across Scotland and beyond, creating ambitious talent motivated to develop impactful solutions for local and global challenges.

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