GOOD PRACTICE SERIES 2013
FOSTERING UNIVERSITY-INDUSTRY RELATIONSHIPS, ENTREPRENEURIAL 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 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 Case Study Profile, Implementation & Funding, Outcomes & Impact, Lessons Learned and Further Information. 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. For the 2014 issue we invite all to submit their suggestion for a good practice case study to UIIN.
**TABLE OF CONTENTS**
**GOOD PRACTICE SERIES 2013**

**IMINDS INCUBATION & ENTREPRENEURSHIP PROGRAM: HOW TO ENABLE AND REINFORCE ENTREPRENEURSHIP EDUCATION THROUGH INCUBATORS**
Sven H. De Cleyn & Frank Gielen

**THE PARTNERING UNIVERSITY APPROACH: AN EXAMPLE OF HOW TO CREATE LONG TERM STRATEGIC PARTNERSHIPS WITH INDUSTRY**
Todd Davey

**THE INDUSTRY-ACADEMIA LIAISON OFFICER: AN EXAMPLE OF DEVELOPING EFFECTIVE AND SUSTAINABLE UNIVERSITY-BUSINESS-COOPERATION IN AN ECONOMICALLY UNDERDEVELOPED REGION**
Kristof Lintz, Maria Moynihan & Stefan Seiberling

**ACCENT – ACCELERATING ENTREPRENEURSHIP: AN EXAMPLE OF ENTREPRENEURIAL DESIGN THINKING FOR TRANSDISCIPLINARY ENTREPRENEURSHIP EDUCATION AND THE WAY TO BECOME AN ENTREPRENEURIAL UNIVERSITY**
Harald von Kortzfleisch, Sandra Speer & Kornelia van der Beek

**THE CASE OF THE UNIVERSITY OF SHEFFIELD (TUOS) INTERNATIONAL FACULTY, CITY COLLEGE: AN EXAMPLE OF AN ENTREPRENEURIAL MODEL FOR INTERNATIONALISATION OF HIGHER EDUCATION**
Panayiotis H. Ketikidis, Yannis Ververidis & Petros Kefalas

**JAMK GENERATOR: AN EXAMPLE OF HOW TO BUILD AN ENTREPRENEURIAL UNIVERSITY OF APPLIED SCIENCES**
Heikki Malinen, Riikka Ahmaniemi & Pasi Raiskinmäki

**SERVICE SCIENCE FACTORY, MAASTRICHT UNIVERSITY: HOW TO INTEGRATE THE VALORISATION INITIATIVE INTO UNIVERSITY RESEARCH AND EDUCATION**
Jochen Barth & Laszlo Determann

**AN ENTREPRENEURIAL COLLABORATIVE APPROACH: AN EXAMPLE OF HOW TO FOSTER ENTREPRENEURSHIP AMONG STUDENTS THROUGH UNIVERSITY-INDUSTRY COLLABORATION**
Juan Ignacio Igartua, Nekane Errasti & Leire Markuerkiaga
IMINDS INCUBATION & ENTREPRENEURSHIP PROGRAM
HOW TO ENABLE AND REINFORCE ENTREPRENEURSHIP EDUCATION THROUGH INCUBATORS

By Sven H. De Cleyn & Frank Gielen
GENERAL INFORMATION

TITLE OF THE CASE  iMinds Incubation & Entrepreneurship program

SALES PITCH  How to enable and reinforce entrepreneurship education through incubators

ORGANISATION  iMinds

COUNTRY  Belgium

AUTHORS  Sven H. De Cleyn
          Frank Gielen

NATURE OF INTERACTION

☑ Collaboration in R&D
☐ Academic mobility
☐ Student mobility
☑ Commercialisation of R&D results in science
☐ Lifelong learning
☑ Curriculum development and delivery
☑ Entrepreneurship
☐ Governance
☐ Other (please specify)

SUPPORTING MECHANISM

☑ Strategic instrument
☑ Structural instrument or approach
☑ Operational activity
☐ Framework condition
1. SUMMARY
Academic organisations engage to an increasing degree in technology transfer and commercialization activities. Furthermore, especially in times of economic downturn, entrepreneurship receives more attention and is to a larger extent seen as a viable career option for students. Following these trends, entrepreneurship courses enter in more curricula worldwide, especially in science, technology, engineering and business programs. As prior studies have demonstrated that entrepreneurship education requires a high amount of action-learning, cooperation with incubators embedded in the curricula as part of the learning system can be beneficial to all stakeholders involved.

This case study presents the role of iMinds in the ICT ecosystem in Flanders (Northern part of Belgium). iMinds is a publicly funded research organisation, conducting demand-driven research on ICT and supporting the commercialisation of new ICT technologies. Through its engagement with universities and university colleges, iMinds contributes to active learning opportunities for (doctoral) students in real-life businesses through its incubator.

2. BACKGROUND
iMinds has been established in 2004 by the government of the Flemish Region (Northern part of Belgium), under its original name of IBBT (Interdisciplinary Institute for Broadband Technology). The organisation, funded by the Flemish Region, was given the task to develop demand-driven research and solutions for the ICT sector and foster the business and societal application and adoption of newly developed technologies, knowledge, products and services. Creating and maintaining a steady supply of new knowledge and technologies in this fast-moving industry has been recognised as crucial for a healthy ICT sector. Furthermore, supporting and organising activities to fostering innovation and entrepreneurship made up an important pillar of iMinds’ activities since its inception. iMinds as an organisation somehow acts as network integrator for research and entrepreneurship in ICT in Flanders. In this role, iMinds collaborates with universities and university colleges and other actors in the ecosystem supporting entrepreneurship (including incubators, pitching events, financers and others). From a research side, iMinds has strategic partnerships with all five universities in Flanders (Vrije Universiteit Brussel, Ghent University, Hasselt University, KU Leuven and University of Antwerp). In this regard, iMinds is somehow a virtual organisation, in the sense that its researchers are located within these five universities and have a double affiliation (iMinds and the respective university). Through these partnerships, iMinds has direct access to and involvement with the vast majority of (ICT-related) researchers in Flanders. In this sense, iMinds acts as lynchpin in a Triple Helix ecosystem for the Flemish ICT community, integrating various actors and stakeholders.

The activities of iMinds are centred on two pillars: [1] collaborative and demand-driven research, in close cooperation with Flemish, Belgian and international companies, government organisations and other societal actors, and [2] to foster entrepreneurial
behaviour amongst researchers and externals and supporting commercialisation and other entrepreneurial activities with various programs.

Through the former, iMinds gets relatively easy access to primarily researchers (professors, post-doc researchers, project researchers and doctoral students). However, in second order the partnerships with the universities grant indirect access to the students, especially in more science, technology or engineering orientations (given the links with these departments through joint research activities).

The various mechanisms deployed to support entrepreneurship and the development of entrepreneurial skills amongst (under)graduate students include teaching and coaching through e.g. the doctoral schools and extra-curricular activities (workshop and coaching series, incubator facilities and pre-seed funding).

As part of the incubator activities, iMinds nowadays supports between 15 and 20 new start-up projects per year (both content-wise and through pre-seed funding), leading to a portfolio of over 20 spin-off companies and between 15 and 20 active incubation projects in May 2013.

3. OBJECTIVES
While the initial objective of iMinds’ incubator program was to transfer its technologies and knowledge to existing SMEs and companies and to assist the creation and development of spin-off ventures to commercialise iMinds’ technologies, the objectives have been broadened in more recent years. Besides the former two, iMinds’ incubator aims at achieving additional objectives:

- Fostering the development of entrepreneurial skills and attitudes amongst researchers and students (not necessarily leading to the creation of more spin-offs);
- Providing active learning opportunities for students through interaction with the businesses in iMinds’ incubator program.

The incubator program additionally seeks to support the successful development of the start-ups it supports, in order to create role models for future generations of researchers, students and entrepreneurs.

4. RESPONSIBILITY
The responsibilities for iMinds’ incubation and entrepreneurship program differ slightly according to the program. The coordinating role is played by iMinds’ Incubation & Entrepreneurship team (I&E). However, in several programs a number of important stakeholders contribute.
### Program | Key partners | Partner responsibilities
--- | --- | ---
**Opportunity recognition workshops**
(1) Doctoral schools of the Flemish universities
(2) Technology transfer offices of the Flemish universities | (1) Getting local support and interest from participants
(2) Providing additional coaching
**Student entrepreneurship workshops**
(1) Local ‘champions’ within the Flemish universities
(2) Workshop coaches | (1) Getting local support and interest from participants
(2) Bringing content and coach participants
**Intensive bootcamps**
(1) Business developers in the research groups
(2) Bootcamp coaches | (1) Getting local support and interest from participants
(2) Bringing content and coach participants
**Incubation program**
(1) Public investment fund SOFi
(2) Global partners in the ‘Go Global’ program | (1) Providing leverage on initial iMinds’ pre-seed funding
(2) Providing expertise on local ecosystem and coaching by local experts
**Virtual incubator**
Physical incubator spaces and local ecosystems in partnering cities | Providing facilities (office space, meeting rooms, ...), access to local events and networking opportunities

Each of these programs is explained in more detail in Section 5 (Strategy & Activities undertaken).

## IMPLEMENTATION & FUNDING

### 5. STRATEGY & ACTIVITIES UNDERTAKEN

Prior studies have demonstrated that knowledge is better internalised and skills adopted to a better extent if students and researchers get the opportunity to engage in learning-by-doing experiences. This is probably even more true for entrepreneurial skills, on which debate has been on-going whether and to which extent they can be learnt through (classic) education. Prior studies have demonstrated that heterogeneity in experiences and teaching methods is critical in entrepreneurship education. Furthermore, creativity should be an important part of these learning experiences. In this sense, incubators can play a major role in fostering the development of entrepreneurial skills and providing learning opportunities in a business context. Students and researchers that have the aspiration to start up a business, can either spend one or two years on an MBA or join an incubator, the latter generally being accepted as a faster and more effective way of learning.
In this setting, iMinds’ strategy to foster the development of entrepreneurial skills and attitudes and to support the creation and development of start-ups is based on two core principles:

- Active learning opportunities in a vibrant setting (e.g. an incubator), where knowledge exchange and spillover effects can thrive to a maximal extent possible;
- Networking and cooperating with relevant entities, creating broader support for initiatives (thereby maximising its impact) and leveraging on the best available partners and resources.

Within this line of reasoning, and as part of its entrepreneurship activities, iMinds has developed a number of tools to foster the development of entrepreneurial skills amongst researchers and students and to support those willing to start up their own venture. These tools try to address all stages of the entrepreneurial process, from early skills development and opportunity recognition onwards to hands-on coaching, pre-seed funding and facilities for the effective foundation of the new business.

The current toolbox that focuses on entrepreneurial skill development consists of following elements:

- Opportunity recognition workshops to develop basic entrepreneurial skills for researchers and help in recognising societal and business applications of their own academic or applied research
- Student entrepreneurship workshops to coach students on a concrete idea, support the development of their entrepreneurial skills and highlight entrepreneurship as a viable career option
- Intensive bootcamps as focused coaching program to translate identified business opportunities into a first business plan, further develop entrepreneurial business sense and pay attention to team development
- (Pre-)seed funding, expert coaching and incubator facilities (co-working and office space), which provide opportunities to interact with and learn from other start-ups and SMEs in the iMinds’ ecosystem

The tools are complemented with follow-up programs to support the start-ups that emerge from the former tools and help them and other SMEs to accelerate and internationalise.

A. Opportunity recognition workshops

iMinds organises a series of opportunity recognition workshops, in close collaboration with the doctoral schools of several (Flemish) universities (more info can be found at http://orw.iminds.be). The goal of these workshops is to help researchers tackle the first important challenge in applying their knowledge, technologies and research outcomes into societal and business applications: identifying opportunities where their research can help in solving (latent or explicit) problems or customer needs. Generally speaking, researchers are great at developing new knowledge and technologies, but somewhat less proficient at identifying challenges for potential customers and matching these with the solutions they could provide. The opportunity recognition workshops aim at supporting researchers, whether doctoral students, post-doctoral researchers or project researchers in regional,
national or European-funded projects, in the development of their human capital (mainly entrepreneurial skills, but also e.g. pitching and presentation skills).

Most often, researchers are used to a technology-push approach, where in valorisation efforts they try to identify applications where their technologies could be deployed (starting from their knowledge or technologies). The opportunity recognition workshops try to increase the researchers’ consciousness and skills for the opposite approach: what problems do (potential) customers encounter and how could the researchers’ knowledge and technologies be used to bring solutions (and value) to these customers (market-pull approach). This opposite approach requires a new set of skills, attitudes and thinking (outside orientation). For the development and training of these skills and attitudes, hands-on practice within an incubator may be more effective than university classes. Through cooperation, both organisations can benefit: the universities’ employees and students develop a new set of skills and expertise, developed in more market-oriented ecosystems such as incubators, whereas incubators and their ecosystems get a knowledge-boost through the latest technologies developed at universities.

B. Student entrepreneurship workshops
Bringing entrepreneurship education to students requires a different approach, when comparing it to programs for researchers. Students are less skilled in conducting (academic) research, but are (usually) somewhat more business-savvy and more prone to take (entrepreneurial) risks. Therefore, a specific student entrepreneurship program has been developed, to achieve two main goals: [1] develop entrepreneurial skills amongst students, and [2] promote entrepreneurship as a viable career option, as opposed to working for an employer.

In collaboration with various universities across Flanders, a number of workshops have been put in place to help students develop their (first) business ideas and through interactive lectures and one-on-one coaching encourage them to draft their first version of a business plan. Experienced entrepreneurs coach a limited number of students or student teams on their own, concrete ideas. Topics typically include opportunity recognition, business modelling, business planning, entrepreneurial marketing and sales and the basics of financial planning, intellectual property rights and legal topics. The goal is not (necessarily) to develop full-fledged business plans, but rather to increase their appetite for entrepreneurship, further increase their enthusiasm of translating their creative ideas into business opportunities and engaging in peer learning and an entrepreneurial ecosystem. In this regard, the cooperation between universities as educational organisations on one hand and incubators as more business-oriented organisations and ecosystems provides a win-win situation. Students get an easily accessible learning opportunity for 'action-learning' and can further increase and broaden their skills, while both universities and incubators reinforce each other in an efficient (and effective) way.

C. Bootcamps
Even in case researchers or students have been able to recognise and identify (a number of) opportunities, they usually need additional skills to become successful entrepreneurs (or intrapreneurs). In the process towards a first business plan and the real preparation for a (new) business, team dynamics and business planning skills come to the foreground. To a certain extent, the centre of gravity moves from human capital development towards a
combination of human and social capital development. IMinds uses bootcamps to support researchers, students and (future) entrepreneurs in developing more in-depth skills and expertise in these domains.

During the bootcamp, attention is devoted to three core activities. In first instance, team formation is in the centre of attention. Especially technology start-ups (such as ICT-related start-ups which IMinds supports) are often started by entrepreneurs with a rather technological background. Furthermore, in case a start-up is prepared for or established by a team, these tend to be rather small homogenous teams. However, given the variety of tasks at hand, heterogeneous teams have been demonstrated to increase success rates. Therefore, the first part of the bootcamp (in fact the preparation for the actual bootcamp) is devoted to building complementary and heterogeneous teams.

Practice has shown that even though a heterogeneous team outperforms a homogenous one, team dynamics trump individual skills. Building an efficient and well-functioning team is a delicate balance between the necessary skills as a team and the inter-personal connection between the individuals. As the bootcamp is one of the first steps in starting a company, a well-functioning rather homogeneous founding team can still be complemented with additional skills in a later stage of development.

The second pillar receiving attention in the pre-bootcamp period and during the bootcamp concerns pitching and presentation skills. In order to be attractive to potential team members, customers, partners and investors, entrepreneurs need to be able to tell a compelling and consistent story about their idea or venture.

The third set of key activities concerns the transfer of more content-related entrepreneurial skills (opportunity recognition, business modelling, business planning, entrepreneurial marketing and sales and financial planning, intellectual property rights and legal topics) during an intensive bootcamp (typically a full-time week off-site in an entrepreneurial hot-spot). In this intensive period, bootcamp participants are coached on these aspects and encouraged to further develop their ideas using the input from experienced business coaches and to take advantage of the local ecosystem in which they are immersed. In this regard, collaboration with incubators provides substantial added value, given the business coaching and access to local ecosystems through the incubator. This change of environment, outside the classical academic environment, is a critical success factor for the effectiveness of the entrepreneurship ‘education’ through bootcamps.

D. (Pre-)seed funding and incubator facilities

The ‘final piece’ in entrepreneurship education would be the preparation and establishment of a real start-up. Real-life action learning probably provides the best learning opportunity to obtain and further strengthen entrepreneurial skills. In this sense, engaging in an incubator program could be seen as the most effective way of doing an entrepreneurial MBA. Since (most) universities cannot offer these facilities to researchers and students, collaboration with stakeholders in the ecosystem is crucial. The end goal should not be that all researchers and students become (self-employed) entrepreneurs, but rather fostering the development of entrepreneurial skills, which is beneficial to all stakeholders involved: the researchers and students themselves in the first place, but also universities, future employers, society ....
In this sense, iMinds has two key programs to support the incubation of new start-ups and entrepreneurial initiatives: [1] a pre-seed incubation program where entrepreneurs get the opportunity to develop their business, using financial support and coaching by iMinds, and [2] an physical incubator, where a mix of co-working spaces, offices, administrative support and a vibrant ecosystem encourages peer interaction and learning. The latter (co-working spaces and incubator facilities) is a mix of start-ups supported by and emerging out of iMinds’ activities on one hand and external entrepreneurs joining these hotspots for their ecosystem character. This type of mix between ‘internal’ and ‘external’ entrepreneurs is hard to achieve in a one-sided university setting. Therefore, cooperation between universities and university colleges on one side, where education and research activities take place, and incubators on the other, bringing an entire ecosystem together, increase the likelihood of great learning opportunities for researchers and students through peer contacts and interactions with businesses.

In this regard, iMinds is also developing a “Virtual Incubator” program, where the same facilities (office space, meeting rooms, ...) and access to local events and networks is being offered by existing (physical) incubators in those cities in Flanders where it can be relevant (initially the five university cities). This gives start-ups supported by iMinds the opportunity to get embedded in the local ecosystem and benefit from local spillover effects and interactions, while also gaining advantage of iMinds’ overall incubation program.

Additionally, since ICT companies are “born global”, each start-up that is supported by iMinds is stimulated to participate to the iMinds’ “Go Global” program. This program offers companies easy entrance into International locations such as New York, San Francisco and Singapore. With the support of local staff and partners, companies have access to market knowledge and will find the support they need to get introduced to those local ecosystems. While the programs primary goal is to help Internationalise local companies, it offers an accelerated learning experience when operating in an international business context.

6. MONITORING AND EVALUATION
Monitoring and evaluating the quality and outcomes of the various programs is a continuous effort, especially given the young age of most of the programs. For all four parts of the program, a number of characteristics of the participants are monitored for each cycle:

- the number of applications;
- their origin (parent university / research group or externals);
- the number of selected individuals / projects;
- the regional distribution (from which province do they emerge).

For the coaching programs, intending at developing entrepreneurial skills and attitudes amongst researchers, students and (future) entrepreneurs, measuring the outcome is somewhat harder. The aim of these programs is not per se the creation of new start-up ventures. The goal is to develop the human (and social) capital of the participants. Therefore, the quality of these programs is mainly monitored by the satisfaction of the participants and the number of participants in subsequent samples (word-of-mouth referrals can make – or break – these programs).
For the incubation program (pre-seed funding and additional services), the outcome is measured to a much more detailed extent. Several measurements should assure the continuous quality and success of the program (aside from the basic measurements on number of participants and origin, as described above):

- the number of started incubation projects leading effectively to the creation of a new start-up;
- the amount of follow-up funding attracted by the entrepreneurs, leveraged by the pre-seed funding provided by the incubation program;
- the employment created by the start-up;
- the added value and turnover generated by the start-up.

### 7. SUSTAINABILITY MEASURES

Even though fostering commercialisation and technology transfer has been a cornerstone activity ever since iMinds inception, the incubation and entrepreneurship program in its current form has only been created recently (starting 2011). Sustainability of the program’s basic aim and principles (given the constant evolution and improvements to the toolbox) is however anchored through following principles:

- Fostering incubation and entrepreneurship is a cornerstone in iMinds mission and vision. This assures the allocation of substantial means for organising these programs. Since 2012, iMinds has the obligation to spend at least 10% of the funds it receive from the regional Flemish government on incubation and entrepreneurship activities.
- Including ‘Key Performance Indicators’ (KPIs) on participation in the entrepreneurship programs both in iMinds’ corporate KPIs as well as in the KPIs of the individual research groups.
- Embedding the activities in local and regional ecosystems, through the active engagement of different stakeholders (doctoral school, technology transfer offices, local incubators and networks).

Through these principles, cross-fertilisation occurs with other stakeholders in the field and their continuous support to our programs is ensured. Obviously, iMinds’ underlying idea is that these relationships should be win-win partnerships, to the benefit of all stakeholders in the short and in the long run.

### 8. COSTS

With respect to the required funding and commitment, a differentiation has to be made between the initial development phase (the first 7 years of iMinds’ existence) and the more recent developments (since 2011). Even though iMinds’ initial commitment of fostering and supporting tech transfer and commercialisation activities, the first years were mainly dedicated to putting a collaborative research program in place (outside the scope of this case study) and establishing a culture to capture the outcomes of this research. The main costs in this initial phase were associated to the salaries of the employees dealing with
incubation and entrepreneurship activities and some basic working budget to provide pre-
seed funding for the first spin-offs and run the first bootcamps. After a slow start, this
roughly grew to a budget of 1 million EUR per year by 2011.

In the summer of 2011, the efforts were accelerated, following a budget increase from the
regional Flemish government for incubation and entrepreneurship activities with about 2
million EUR per year. This increase was used to reinforce the team, start the development of
new parts of the program and accelerate existing initiatives (e.g. to support more incubation
projects). The largest cost categories remained the same: providing pre-seed funding for the
incubation projects (a couple of hundred thousand euros per year) and salaries of the I&E
team members. However, for the new initiatives (revised bootcamp, student
entrepreneurship workshops, and opportunity recognition workshops) a yearly budget of
between roughly 20,000 EUR and 75,000 EUR per year has been foreseen.

No need to mention that the I&E teams also puts a lot of effort and enthusiasm into
developing new programs and running them. Having a complementary team dedicated to
making it a success certainly is a critical success factor in setting up such initiative.

9. FUNDING
As highlighted in the previous section, a distinction should be made between the initial
efforts (2004 – summer 2011) and the subsequent period. Overall, the entire budget comes
d from the dotation iMinds receives from the regional Flemish government.

For the opportunity recognition workshops, which have been set up together with the
doctoral schools, funding comes from both sides (largest share from iMinds, part from the
doctoral schools budgets). In the near future, it is the aim however to get a part of the budget from the equity participations iMinds holds in its start-ups and spin-offs (through exits) and, to a lesser extent, through revenues from licenses on iMinds’ technologies and knowledge licensed to
third parties.

OUTCOMES & IMPACT

10. OUTCOMES
The long-term outcomes of the rather recent programs are hard to assess at this point in
time. However, a number of directly visible outcomes can already be detected and
(sometimes) measured:

- The attention for and interest in developing entrepreneurial skills and setting up
  new businesses in increasing amongst (doctoral) students and researchers. The
  number of participants registering for the (student and opportunity recognition)
  workshops, bootcamp and incubation programs have substantially increased. The
2013 bootcamp is probably the best example. While usually having 4-6 teams on board for the bootcamp and receiving between 10 and 20 applications, the 2013 bootcamp was ‘oversubscribed’. Applications from over 40 teams were received and the final number of participants (after selection) had to be capped at 10 teams (about 20 participants). Furthermore, for the incubation projects, the number of submissions and new projects started has been increasing steadily (as can be seen in Figure 1).

- The number of people working in the incubation facilities (co-working space and separate office space) has rapidly increased from about 10 around the time of establishing the incubator space to over 35 now.
- Another tangible outcome is the leverage created by iMinds’ pre-seed funding on follow-up funding the start-ups receive by external entities (angel investors, venture capitalists). After just 1 year of the incubation program, a leverage with a factor of over 4.5 was created, as can be seen in Figure 2 (i.e. for every Euro iMinds invested as pre-seed funding in the start-ups, over 4.5 Euros as subsequently attracted from external investors). In line with this increased funding, the start-ups supported by iMinds have created over 100 new jobs.

![Figure 1: Number of incubation projects](image)
11. IMPACTS

The impact of the various programs, even though some are very young, can (already) be seen at three levels.

- Firstly, they result in an increased awareness of entrepreneurship as viable career opportunity. Increasingly, students and researchers are dreaming of a career as entrepreneur, following well-known role models on both a global level and increasingly on a more local level, where Belgian entrepreneurs start achieving success on an international level. Through the regular interactions with the universities, researchers and students become more and more aware of the fact that entrepreneurial skills can also be valuable outside a start-up context and increase the overall human and social capital. This has also resulted in an increased participation of researchers and students in programs and tools to foster the development of entrepreneurial skills.

- Secondly, these programs increase the number of student start-ups, which additionally are better equipped to grow and prosper. Since the program’s start in 2011, iMinds has received eight applications for student start-ups and has supported four, despite the program’s rather low profile start (with a test case only in the city of Ghent). The first (small) successes are already being achieved, only 1.5 years after the launch of the program. The first start-ups have become profitable ventures and one start-up is close to securing an investment round of several hundred euros. Furthermore, about 35 students and researchers have made use of the (physical) incubator and co-working spaces, which embeds them to a larger...
extent in the entrepreneurial and business ecosystem in the region. The latter has
the significant advantage of opening up new networks (social capital) and creating
additional occasions to get feedback, learn and potentially increase (joint) business
opportunities.

- Thirdly, this ecosystem approach results in an increased cooperation between
  universities (e.g., at the level of doctoral schools) and with other network actors,
  leading to spillover effects and more effective use of proceeds. Universities get the
  opportunity to focus (more) on their core activities (conducting research and
  providing education), while at the same time having more learning opportunities in
  real business settings within reach. Additionally, their researchers and students can
  further increase (and diversify) their human and social capital, often enhancing their
  abilities in the job market. For the incubators, the connection with researchers and
  students enriches their ecosystem, creates more (knowledge-intensive) leads and
  strengthens the knowledge base on a network level. Increasingly, (independent)
  entrepreneurs find ways to team up with researchers and students, creating
  opportunities to strengthen their offerings towards customers and reinforcing their
  teams.

12. INVOLVED STAKEHOLDERS AND BENEFICIARIES

This case study is by definition integrated into the regional innovation ecosystem, given the
very nature of iMinds as an organisation and the way the entrepreneurship programs have
been conceived (as discussed earlier). In this regards, many stakeholder (potentially) benefit
from the incubation and entrepreneurship programs.

iMinds

iMinds as an organisation has direct and indirect benefits. First and foremost, its ‘brand
name’ and societal impact increases. Secondly, through the creation of more human capital
in the region, iMinds helps in creating a more skilled workforce, including for its own
operations. In third instance, through the creation of new businesses, iMinds fosters an
ecosystem of potential (future) business partners. Already close after foundation, a number
of start-ups have set up (new) research projects with iMinds research groups, contributing
yet again to the strength of iMinds’ research (from which a number of start-ups emerged).
Finally, through the equity participations and licensing deals, iMinds may generate a financial
benefit from its programs.

Universities

Similar to what is true for iMinds, the universities benefit from a workforce better skilled to
perform their jobs and help in creating impact based on their research. Furthermore, given
the strong increase in doctoral students, career perspectives are created for university
employees. Entrepreneurship is increasingly seen as a viable career option. Thirdly,
universities may also benefit from the increase in number of start-up ventures, since the
number of potential business partners also increases for them. This is even more true given
their local anchoring, which increases the likelihood that the start-ups enter into
collaboration with the universities.

Students

Students (undergraduate and graduate and doctoral) enjoy a more favourable employment
climate, given the increase in number of opportunities at their disposal. Besides entering into
positions at public organisations or existing businesses, they have the option to be skilled as future entrepreneurs. Furthermore, if and when they would decide to go the entrepreneurial path, not only would their skillset have improved, but also their knowledge on potential support mechanisms and sources of advice and funding.

Researchers
For researchers, the potential benefits are similar to the ones described above for students. Primarily, it concerns an improvement in their human capital. Furthermore, more flexible career opportunities can be created through their participation in workshops and incubator programs. Finally, the researchers should have an enhanced view on how to create real impact with their research and where to apply their technologies.

Start-ups in the incubator
A group particularly benefiting from the incubation and entrepreneurship programs are the start-ups. Not only do they have facilities at their disposal, they are also increasingly embedded into real ecosystems, where new business opportunities, spillover effects and collaborations emerge. Furthermore, they have access to a larger pool of skilled people, with an entrepreneurial mindset.

Businesses in general
Existing companies and SMEs also benefit from these programs. On a regional level, more people with entrepreneurial skills and attitudes will enter the job market. These skills are increasingly in demand, also within existing businesses (‘intrapreneurs’). These programs thus contribute to a workforce better skilled to detect viable opportunities and knowing on how to exploit them. Additionally, even though start-ups challenge the ‘status quo’, they also create new business partners and opportunities for existing companies.

Society
While the impact of iMinds’ approach on society is not easy to measure, a higher integration of academia and business and the development of more ‘entrepreneurial capital’ can be seen engines to foster economic renewal, economic growth and increasing standards of living. This happens both directly (through the creation of new businesses and jobs), as well as indirectly, through the application and valorisation of knowledge and technologies in the region where they have been created.

13. AWARDS / RECOGNITION
The iMinds model has been recognised by a number of entities, including:

- the European Commission, which included two of iMinds’ managers in different advisory boards to assist in developing new programs to foster commercialisation efforts and the development of entrepreneurial skills and attitudes throughout Europe;
- the European Institute of Technology (EIT), which adopted iMinds as affiliate member and where one of the strategic focus areas is entrepreneurship education for researchers and students.
14. PRIMARY CHALLENGES
The main barriers to maximise the impact of the program occur at two specific aspects:

- The awareness of people on how and why these programs could be useful for their personal development and their willingness to ‘jump’ into an entrepreneurial career. This challenge will most likely need years to be fully overcome, especially since Belgium never really had a tradition in being one of the more entrepreneurial countries. This challenge could however be overcome more quickly if a number of (highly visible) success stories emerge, which could act as role models for future generations.

- The second barrier relates to access to funding for start-up ventures. The financial market for (high-tech, high-risk) start-ups is not so developed (yet) as in more established hotspots around the global, with Silicon Valley as absolute number 1. The challenge will be to unlock enough funding to help entrepreneurs develop ‘born global’ companies and provide them with enough resources to live up to their ambitions. This requires more than the mere availability of investment funding, but also a lively exit market (mergers, acquisitions and initial public offerings).

- A third barrier has rather quickly been removed. The ‘competitive’ academic environment was not really favourable to set up programs cutting across the walls between various universities and organisations. However, the current climate is really constructive in creating collaborations across the boundaries of the different universities and beyond. Increasingly, decision makers at organisational level and policy levels understand the need for ’coopetition’ to bring prosperity to the region and they have acted upon it.

15. SUCCESS FACTORS
A number of important factors have fostered the (embryonic) success of iMinds’ approach on incubation and entrepreneurship:

- The commitment of the regional government in Flanders to invest in the creation of an integrated approach and the development of an entire ecosystem. This investment has been continuous and even increasing over time, even in more difficult budgetary settings. This support is crucial, especially since the relative absence of abundant funding for more risky projects such as the creation and support of high-tech start-ups.

- A second crucial factor is the willingness of research groups and universities to engage in the approach. Increasingly, they realise the need for developing entrepreneurial skills amongst their students and researchers. These efforts do not need to necessarily emanate into the creation of new start-ups, but the development of this human capital and a more entrepreneurial attitude as key to safeguarding the wealth for future generations.
A highly dedicated and enthusiastic team, willing to challenge the status quo and try out new approaches is the third critical success factor. The development of new approaches and the subsequent revision thereof to make them (even) better, is also part of an attitude and atmosphere in a team that needs to be present in order to deliver.

Last but not least, a strong vision is needed towards what is being needed to engage one organisation (iMinds), but also other related stakeholders contributing to the roadmap (universities, individual students and researchers, financers, government, incubators, experienced entrepreneurs and service providers ...). The inception of this vision requires highly capable managers, but also continuous support from their part to the team that needs to deliver, including a certain amount of risk taking.

16. TRANSFERABILITY
The case of iMinds could be an example for a number of organisations at several levels. Since it is an integration of efforts by many stakeholders, strong support from a regional or national policy level is preferable. Regions willing to engage in the development of a true entrepreneurial ecosystem and culture could benefit from some lessons of this case study. Within these regions, several organisations, including universities and their respective technology transfer organisations, and other stakeholders such as incubators can draw lessons from iMinds’ approach. Even though the impact on a somewhat longer term remains to be seen, the overall culture towards and interest to engage in entrepreneurship is clearly changing in Flanders.

FURTHER INFORMATION

17. PUBLICATIONS / ARTICLES

- Additional publications and sharing of best practices will become available in the course of 2013, including in the proceedings of the University-Industry Interaction Conference 2013 (UIIN, May 2013, Amsterdam) and the 8th European Conference on Innovation and Entrepreneurship (ECIE, September 2013, Brussels).
18. LINKS

- http://orw.iminds.be
- http://iboot.iminds.be

19. KEYWORDS

Incubators, academic entrepreneurship, student entrepreneurs, entrepreneurship education, entrepreneurship curriculum

20. PUBLIC CONTACT DETAILS

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THE PARTNERING UNIVERSITY APPROACH
AN EXAMPLE OF HOW TO CREATE LONG TERM STRATEGIC PARTNERSHIPS WITH INDUSTRY

By Todd Davey
### GENERAL INFORMATION

<table>
<thead>
<tr>
<th>TITLE OF THE CASE</th>
<th>The partnering university approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES PITCH</td>
<td>An example of how to create long term strategic partnerships with industry</td>
</tr>
<tr>
<td>ORGANISATION</td>
<td>Münster University of Applied Sciences</td>
</tr>
<tr>
<td>COUNTRY</td>
<td>Germany</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>Todd Davey</td>
</tr>
<tr>
<td>NATURE OF INTERACTION</td>
<td>☑ Collaboration in R&amp;D</td>
</tr>
<tr>
<td></td>
<td>☐ Academic mobility</td>
</tr>
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<td></td>
<td>☐ Student mobility</td>
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<td></td>
<td>☑ Commercialisation of R&amp;D results</td>
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<td>☐ Lifelong learning</td>
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<td>☐ Curriculum development and delivery</td>
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<td>☐ Governance</td>
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<td></td>
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<tr>
<td>SUPPORTING MECHANISM</td>
<td>☑ Strategic instrument</td>
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<td>☑ Structural instrument or approach</td>
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<tr>
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<td>☑ Operational activity</td>
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1. **SUMMARY**
The example of the MUAS Germany depicts a university that developed a university-wide strategic partnering approach to cooperation with business. Faced with reduced state funding in the late 1990’s, the university embraced the concept of long-term, ‘early-stage’ partnerships and collaboration at the highest level and, as a consequence has been recognised as best-practice nationally for their efforts. Now MUAS is the leading German university of applied science with regard to third-party money.

2. **BACKGROUND**
MUAS was founded in 1971 following mergers of several state-owned and private engineering and building schools. Since that time, MUAS has grown into one of the largest and most successful universities of applied sciences in Germany, with main campuses in the cities Münster and Steinfurt. The university has close to 10,000 students, supported by 800 employees of which 240 are professors who teach and do research in the fields of 12 different faculties and specialist divisions.

The university nowadays is an institute for applied education and research. However, over the last ten years it has acquired an outstanding reputation for its development of the university’s ‘third mission’. This process commenced in 1998 when a university professor with a background in technology marketing was appointed to the position of Vice-Rector for Research Affairs and Technology Transfer. It was the first time in Europe that such a vice-rector had been appointed and it was the start of the university’s focus on increasing third-party money through marketing. A tenet of the newly appointed vice-rector was that if the university is to cooperate more with research partners from industry, and if it requests more money for its research performance, it finds itself in a market. The principle follows that if one wants to be successful in a market, one will necessarily need to undergo and conduct marketing and apply marketing models and instruments.

3. **OBJECTIVES**
Whilst the university has previously worked with industry, a ‘redirection’ was undertaken in 1998 to incorporate business more centrally in the university’s activities in response to reduced state funding.

The objectives were to

- increase third-party money
- increase the relevance of the research and teaching areas

through a focus on establishing long-term and strategic partnerships with businesses.
4. RESPONSIBILITY
The responsibilities for successfully implementing its partnering approach are divided in three distinct pillars and communicated through the terms “denken” (thinking), “lenken” (steering), and “handeln” (acting). The three pillars of the concept also refer to three different organisational entities – all working interdisciplinary. The following table outlines the three pillars and demarcates them from each other.

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Entity</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>Analytical-scientific</td>
<td>Science-to-Business Marketing Research Centre (S2BMRC)</td>
<td>Conducting market research and developing tools and instruments to support university management and the “transfer agency”</td>
</tr>
<tr>
<td>(“thinking”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic (“steering”)</td>
<td>University Management</td>
<td>Strategic planning and decision making</td>
</tr>
<tr>
<td>Operative (“acting”)</td>
<td>Knowledge and Technology Transfer Office (“Transfer Agency” or TTO)</td>
<td>Transferring knowledge and technology</td>
</tr>
</tbody>
</table>

(1) The S2BMRC is primary responsible for informing the other two parties on latest (market) research results, thus contributing to a more informed decision making process. In addition to the execution of research, the centre also develops various tools to support the university’s management and the “Transfer Agency”. (2) The university management deals with the strategic planning and decision making on the university’s partnering program (informed by the S2BMRC). For example, a vice-rector solely dedicated to this field develops the long-term vision and overlooks key accounts. (3) Lastly, the TTO, called “Transfer Agency” within MUAS, is responsible for the operational transfer of knowledge and technology.

IMPLEMENTATION & FUNDING

5. STRATEGY & ACTIVITIES UNDERTAKEN
The university implemented a number of pillars upon which the university was able to create a sustainable and long-term commitment to cooperation with business. These initiatives are described below.
The creation of the previously mentioned vice-rector position laid a firm basis for the increase of third-party funds. The aim of this appointment was to differentiate the university from other universities and institutions in the eyes of industry, and to promote partnerships purposefully. In 2004, based on this successful experience, the vice-rector position was renamed Rector for Partnerships and Strategic Alliances.

In their search for information about working more closely with business, a general lack of knowledge around the topic within a European context was observed. As a result, a research centre dedicated to science marketing, the S2BMRC, was established in 2002. The centre is geared to developing international know-how, models, instruments and methods in Science-to-Business Marketing and today numbers approximately 20 staff.

Another strategy and action which MUAS undertakes is an analysis of the awareness, market potential, customer satisfaction and the image (different to other HEIs) which is undertaken every few years. These analyses are there to improve the quality and performance level of MUAS. It also stimulates the university to segment markets based upon market needs and strategically approach targeted clients. The reasoning is that (potential) customers and (potential) partners in the market are not equal to each other. As an example, it was found that companies having their own R&D department perceive a university-industry relationship differently to those not having their own R&D activities. Further, it was discovered that family-owned SMEs are different to shareholder-owned ones and companies having had previous experience in working with academia behave differently to those not having had this kind of experience. Thus companies differ in terms of some criteria and this segmentation forces the university to strategically approach and communicate with different segments in a different way. Therefore, the university has created different marketing and partnering strategies for these different ‘markets’.

Additionally, a private transfer agency, Transferagentur Fachhochschule Münster GmbH, was created to manage these partnerships. The transfer agency is a privately owned company (49% by the university) which serves as a firm basis for strategic alliances and partnerships with many businesses. It has a total network of approximately 1800 companies, with a total number of 800 projects a year. This total can be divided into different levels of commitment and coordination.

Lastly, in recognising that educating and incentivising academics was essential in increasing cooperation with industry, a research offensive was launched within the university. The initiative had 12 building blocks designed to provide sufficient incentive for academics to get more involved in market-oriented research and transfer. Some of the building blocks include the following:

- Whoever manages to procure funds from industry receives a financial bonus of 8% (technical) or 12% (non-technical faculty), provided by the university and the state government.
- A ‘space negotiating model’ prescribes that a faculty receives 23 sq m of additional area if it raises €35,000 in third-party funds. As not all faculties have the same possibilities to raise large amounts of third-party funds, the threshold for the additional area also differs depending on the faculty.
Other measures of research performance, besides third-party funds, such as publications, public presentations and attendance of conferences and symposia are assessed according to a defined point system. In these cases, those who undertake active research are able to reduce their teaching load and receive a salary increase.

As a basis for long-term success, MUAS has defined the following guidelines for research and transfer and anchored these in the university’s strategic planning for 2006-2010:

- R&D is crucial for MUAS and serves to establish and cultivate long-time partnerships with (former) students, research institutions and businesses.
- Research and teaching are equal pillars of the university. Their quality is interdependent. R&D activities provide important impulses for teaching.
- The university seeks to establish long-term and strategic partnerships, which align with the university’s strengths or complement deficiencies in the field of resources and offers.
- Private as well as publicly-funded projects have the same value and appreciation in career planning. It is primarily third-party budget from industry, which is to be further enlarged.
- R&D is beneficial for researchers – through research reputation, better structures and personal advantages. Researchers developing their career by undertaking good research activities will directly benefit from this.

6. MONITORING AND EVALUATION
It probably would be the most comprehensible indicator for MUAS to measure the success according to the level of received third-party funds. However, even though this is measured, MUAS prefers to measure the effect of its transfer performances in the economy. Measurement categories include newly established and retained (difficult to measure) job positions, increase in turnover and growth in market share with their customers. Furthermore, MUAS monitors and evaluates the market by doing regular analysis on: 1) awareness of the university in their target groups, 2) image of the university, 3) market potential, and 4) customer satisfaction. These analyses are the basis for improving the performance of MUAS and they help to improve the marketing and partnering strategies of MUAS. Additionally, the success of the partnering strategy is measured by new technologies, new clients, the greater market share of the partners, international partners and the number of jobs created.

7. SUSTAINABILITY MEASURES
A long-term perspective to university-business cooperation was always a basic tenet in the move to a more market-facing university. However, MUAS recognised the fact that changes needed to be made at a number of levels within the university. The success of the initiative was based upon a triangular approach for innovation and success in knowledge transfer as follows:

- It is strategically embedded and anchored with the university's board.
- It focuses at an analytical level through the S2BMRC tasked with the job of researching how to link the university better to business and how to improve the marketing competencies of academics, and
- At an operational level, university-business cooperation is managed by an agency for technology and knowledge transfer.

The corners of this strategic triangle ‘cross-fertilize’ and thus, jointly influence methods. In addition, they also influence the processes and projects of research and transfer promotion at the university. By operating and directing initiatives at these three levels, the university has ensured a sustainable shift in focus for the university and the academics who undertake it operationally.

8. COSTS
With respect to the required funding and commitment, a differentiation has to be made between the initial development phase of a partnering approach as well as the later operation phase. In the transformation phase, lots of efforts (especially time and enthusiasm) were required to develop the approach together with the various stakeholders. It was found to be extremely important to extensively involve all stakeholders in the process to generate the broadest possible commitment – this requiring a lot of time and dedication. Having achieved this commitment, resources such as room space, further time commitments to advance the concept as well as funding to communicate the concept had to be made.

With respect to the operation phase, funding is required to secure the operation of the three main pillars, namely the university management dedicated to university-business cooperation, the transfer agency as well as the S2BMRC.

9. FUNDING
Internal university resources were re-allocated and re-directed to support an organisation-wide approach to the new directive. The primary source of funding was sought from business in order to support the cooperation process as they were set to be the financial beneficiaries of the research projects and other cooperation types. State, Federal and European-level funding projects were also sought to supplement this cooperation with business.

It has to be noted that in the optimal case the knowledge and technology transfer office (“transfer agency”) is able to fund itself shortly after its foundation. With regards to the scientific-analytical unit, the Science-to-Business Marketing Research Centre, MUAS was able to acquire funding from the state of North Rhine Westphalia to establish the centre. After 3 years of funding, the centre was able to secure funding from external sources (e.g. state funding, national funding programs, EU funding and business projects), making it today independent from university resources.
10. OUTCOMES

MUAS is the leading German university of applied science with regard to third-party money for industrial projects and collaboration and additional federal state funds for R&D. In fact, third-party money generates one-third of all university income. In 2010, MUAS created a total of more than €12m in third-party funds. This was the 12th year in succession that the university had an increase in its third-party funds since introducing the marketing approach.

Whilst many academics believed that universities-business cooperation could only be undertaken in faculties that are technology focused, MUAS puts no focus on technology. The university continues to stimulate universities-business cooperation throughout all 12 faculties of which only seven of them are technology-oriented, whilst three are business and socially focused, and two of them are design and architectural. Even though one might expect that the technology faculties generate the largest amounts of third-party funding, this has not proven to be the case, with social science being a very high contributor to third-party funding in the university. Through the market research process initiated at the university, the social sciences department was able to identify new markets in working for, or together with, non-profit organisations, social bodies, governmental bodies, and ministerial bodies.

Lastly, the annual allocation of resources within the university towards universities-business cooperation accounts for a systematic strengthening of research and transfer. When calculating the faculties’ budgets, the research-related component contributed 7% on average in 2000, whereas in 2010 it already amounted to 33%. Around 45% of third party money made at the university is attributed to be money direct from companies.

11. IMPACTS

In addition to previously mentioned results and achievement, some unintended impacts of the shift in focus of the university have also been documented.

For example, when the university create six academic committees to manage different objectives within the university they included in each committee two persons from industry. The main aim of this, was to stimulate innovation, to professionalise the decision making process and to get a new vision from outside the university. However, having been involved in the university’s decision making process, those from industry then felt some ownership of the university and became advocates for the university within their external networks. In that sense, the university has acquired 12 ambassadors for the university.

Another unintended impact was the creation of positive university-business role models which had the effect of further stimulating interest and motivation in other researchers. It was found that as academics were successful in their efforts to work with business, and thus received various incentives for their cooperation such as greater office space, other researchers observed this. This had the effect of influencing them to show more interest in interacting with business.
12. INVOLVED STAKEHOLDERS AND BENEFICIARIES

MUAS’ partnering approach is well linked with stakeholders of all kinds. In the following, each of these main stakeholders and their key benefits are briefly discussed.

**Businesses**

For-profit as well as not-for-profit organisations alike benefit from MUAS’ partnering approach by having access to research resources (results, but also research competencies and capacities) which are more relevant to their business environment. In addition, external organisations benefit from students which are better prepared for the market environment.

**MUAS**

The university itself benefits from being more independent from other funding sources and especially from being more connected to the “real world”, including better prepared students for the labour market and more relevant research benefitting businesses, the region and society in general.

**Academics**

*MUAS’ academics benefit from* more relevant work, new funding for their own projects, higher reputation, increasing chances of promotion and the possibility of additional income.

**Students**

MUAS’ students primary benefit from the university’s interactions with business by receiving education programs which are better aligned with the needs of industry (e.g. firm representatives being involved in education boards, guest lectures from industry, and more opportunities for internships, thesis and jobs).

**Region**

With its about 50,000 students and various university institutes, Muenster has a central position in terms of teaching and knowledge creation in the region, state and even nationwide. However, the region benefits best if the knowledge is not only created, but also exploited in and around Muenster. MUAS’ partnering approach with its clear commitment to work together with business creates a more attractive environment for firms to be located close to it, making the region at all more competitive in the long term.

**Society**

While the impact of the partnering approach on society is not easy to measure, a higher integration of academia and business is seen as a contributor to factors such as increasing standards of living and social and recreational benefits.

13. AWARDS / RECOGNITION

MUAS achievements in this area were recognised in 2007 when MUAS was named one of the Top Universities in Germany applying the best strategies of knowledge exchange and technology transfer by the German Federal Ministry of Education and Research and the Initiative of German foundations for the German Sciences (Stifterverband für die Deutsche Wissenschaft). Now MUAS generates the highest amount of ‘third party’ money (industry contribution) of all universities of applied sciences in Germany.
14. PRIMARY CHALLENGES
A perceived weakness could be found in the approach to IP management as this approach has still not been developed sufficiently; and indeed difficulties still occur with it. One of the reasons for this is that all companies are unique, and therefore it is challenging to apply just one system for managing IP. Moreover, sometimes the IP negotiations can also be difficult following joint discovery about who gets to use it, in what way and who earns what.

15. SUCCESS FACTORS
High-level commitment to partnering with industry is a key success factor of MUAS. UBC is supported, starting at the strategic level of the organisation and flowing down to the operational level. The industry focus already starts in the job application, where potential employees who support UBC are favoured. The active implementation of strategies in structures such as the transfer agency and the research offensive operationalises an industry focus.

The university has developed a partner relationship management (PRM) system and Stairway Model which places every partner on the stepladder. The model allows for the strategic management of university partnerships as a set of norm strategies have been created for each level of UB relationship (each step in the ladder) to either maintain, increase or decrease the relationship.

At the academic level, the creation of incentives for academics to engage with business has been a further element of the initiative’s success.

16. TRANSFERABILITY
The case of MUAS contains key learning points for all universities seeking to sustainably increase third-party income through the creation of longer term partnerships with business. Whilst the impact of this focus has not only been felt on the financial-side, greater interaction with business has also had substantial impact on the research and teaching sides. More specifically, there are key aspects of the case that are applicable for other universities of applied science or very specifically, for universities that are not established in a main city.
17. PUBLICATIONS / ARTICLES


For more publications, please visit www.science-marketing.com

18. LINKS

- https://en.fh-muenster.de/
- http://www.science-marketing.com

19. KEYWORDS

Increasing third-party Income, Early-stage partnerships, Partnering, Projects with business

20. PUBLIC CONTACT DETAILS

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THE INDUSTRY-ACADEMIA LIAISON OFFICER
AN EXAMPLE OF DEVELOPING EFFECTIVE AND SUSTAINABLE UNIVERSITY-BUSINESS-COOPERATION IN AN ECONOMICALLY UNDERDEVELOPED REGION

By Kristof Lintz, Maria Moynihan & Stefan Seiberling
GENERAL INFORMATION

TITLE OF THE CASE
The Industry-Academia Liaison Officer (Wirtschaftstransferbeauftragter, WTB)

SALES PITCH
An example of developing effective and sustainable University-Business-Cooperation in an economically underdeveloped region

ORGANISATIONS
University of Greifswald, Chamber of Industry and Commerce Neubrandenburg

COUNTRY
Germany

AUTHORS
Kristof Lintz
Maria Moynihan
Stefan Seiberling

NATURE OF INTERACTION
- Collaboration in R&D
- Commercialisation of R&D results in science
- Governance
- Other: Development of UBC

SUPPORTING MECHANISM
- Strategic instrument
- Operational activity
1. **SUMMARY**

To foster cooperation between business and academia in an economically relatively underdeveloped region of Germany, the University of Greifswald as well as the other four Higher Education Institutions (HEIs) in Mecklenburg-Vorpommern introduced industry-academia liaison officers (Wirtschaftstransferbeauftragte, WTB). The WTB`s tasks are informing the relevant actors about University-Business Cooperation (UBC), providing a dedicated contact person for actors from both sides and fostering concrete collaborative projects. Since the project is still running it is too early to evaluate its success conclusively, however, first results show the WTB network has proved highly successful in both providing the basis for sustainable UBC and promoting specific cooperative activities.

2. **BACKGROUND**

The University of Greifswald is located in the German federal state of Mecklenburg-Vorpommern (M-V), which is in the national context, marked by relatively low levels of industrialization, net product and private sector investment in research and development, the economic structure of the region being dominated by small and medium-sized enterprises (SMEs). Although the university conducts practice-oriented research and is nationally and internationally renowned in certain academic fields – especially from the life sciences – the quality and quantity of UBC both at the location and in the whole region remains developable. There are five publicly funded HEIs in MV: The universities in Greifswald and Rostock as well as the universities of applied science in Neubrandenburg, Stralsund and Wismar, all of which conduct practice-oriented research. However, the respective academic expertise is not matched by a sufficient number of “customers” from the regional business and industry sector. Furthermore, the business actors often lack the necessary absorptive capacity. With regard to UBC, the following major obstacles are characteristic for the region:

1. Most of the relevant actors are unaware of the potential benefits of UBC as well as possible partners, forms of collaboration etc.
2. The majority of existing regional UBC is carried out on the level of individual cooperation: there is no encompassing and coherent platform for managing the complex nature of UBC, information exchange, networking etc.
3. The prevalence of small enterprises also constitutes an obstacle, since the limited financial resources of these enterprises often prohibit extensive investments in R&D activities and thus contribute to a relatively low level of investments by business in UBC. Regarding investments in R&D activities by businesses, M-V is the antepenultimate of the federal states in Germany. Additionally, programmes for the public (co-) financing of UBC activities are largely unknown to the relevant actors.
4. The steady depopulation of M-V – the federal state has lost 15 percent of its population due to migration and a decline in birth rates since 1990 – contributes to a shortage of skilled personnel, which also negatively affects the capacity for UBC, especially on side of business actors.
The case study presented here concerns the institutionalisation of industry-academia liaison officers (Wirtschaftstransferbeauftragte/r, WTB) at all five HEIs in M-V to address these problems and contribute to the sustainable and effective strengthening of UBC in the region. This case study focusses on the WTB of the University of Greifswald, however, wherever necessary the discussion will include the wider WTB network.

3. OBJECTIVES
The main objectives can be categorized into two pillars, in which the first one concerns the direct project objectives for the WTB and the second one the contribution of the project objectives to the solution of the problems presented in point 2.

Direct project objectives for the WTB

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Facilitate access for business actors to regional university and non-university research institutions</td>
</tr>
<tr>
<td>2</td>
<td>Foster and mediate concrete cooperation projects between business and academia</td>
</tr>
<tr>
<td>3</td>
<td>Act as a contact person for business actors</td>
</tr>
<tr>
<td>4</td>
<td>Acquire business contacts for HEIs and researchers</td>
</tr>
<tr>
<td>5</td>
<td>Initiate and establish UBC-networks and connect them efficiently with existing networks</td>
</tr>
<tr>
<td>6</td>
<td>Find graduates for SMEs suffering from a skills shortage</td>
</tr>
</tbody>
</table>

Contribution of the WTB activities to the UBC-related problems of the region

<table>
<thead>
<tr>
<th>Problem addressed</th>
<th>Contributing WTB objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of awareness about UBC/benefits</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Absence of an integrated platform for managing UBC</td>
<td>5</td>
</tr>
<tr>
<td>Limited financial resources of regional SMEs</td>
<td>(2), see also section 15.</td>
</tr>
<tr>
<td>Shortage of skilled personnel</td>
<td>6</td>
</tr>
</tbody>
</table>

4. RESPONSIBILITY
The individual WTB is responsible for conducting the concrete project activities. In accordance with the collaborative approach underlying the project, overall responsibility for project implementation, monitoring and evaluation is shared between actors from the triple helix: the University of Greifswald, the Chamber of Industry and Commerce Neubrandenburg and the Ministry for Economy, Construction and Tourism of Mecklenburg-Vorpommern.
5. STRATEGY & ACTIVITIES UNDERTAKEN
The main strategic goal of the project is to foster the cooperation between actors from business and academia which, through the integration of the WTB of the University of Greifswald into the state-wide WTB network, should lead to the establishment of sustainable and effective UBC in an economically underdeveloped region.

According to this goal, activities undertaken can be clustered into two main categories:

Laying the groundwork for UBC: This set of activities includes the persistent information of the relevant actors – with a focus on those from business – about the benefits and conditions for UBC and potential partners. Via personal discussion in face-to-face meetings, attendance of and presentations at selected workshops and conferences as well as the publication of related PR material, the WTB aims to raise the awareness of the opportunities for UBC and the benefits it brings.

Concrete UBC projects: Furthermore, the WTB’s tasks also encompass the fostering of concrete cooperation projects. This includes the identification of potential for collaborative action, the bringing together of relevant actors, the moderation of meetings, the brokering of personal exchange and not least advising on (co-)funding opportunities.

6. MONITORING AND EVALUATION
The WTB has to submit semester reports of activities to the institutions funding the project. In these, the WTB has to give concise information on his activities undertaken. The reports are structured along eight areas of activities / indicators of success:

(1) Business contacts
(2) Technology transfer and cooperation
(3) Initiated R&D-projects
(4) Patents
(5) Events
(6) Public Relations
(7) Support of technology-oriented start-ups
(8) Further activities

According to the differentiation of activities introduced above, indicators (1), (5), (6) and (8) can be broadly grouped into the category “groundwork”, while the other ones are more closely related to specific cooperation projects. However, two aspects concerning the validity of the indicators have to be considered: firstly, especially indicators (2) and (3) are not clearly defined, the question when and if a project can be categorized as “initiated” being an evident point here. Secondly, the role of the WTB in the processes is to a certain degree dependent on the subjective assessments of the participating actors. Addressing
these points, the semester reports combine quantitative and qualitative approaches in monitoring and evaluating the progress of the project.

7. SUSTAINABILITY MEASURES
The sustainability of the WTB approach is addressed via two major mechanisms. Firstly, the WTB’s activities aim to raise the awareness of successful UBC and establish personal networks that are to a certain degree independent of the WTB. Thus, it can be argued that the WTB approach has potential long-term effects especially in establishing the foundations of effective UBC. Secondly, given the intensive social capital invested by the WTB as a person, the University of Greifswald and the Chamber of Industry and Commerce Neubrandenburg plan to extend the project duration. In the upcoming project period, the focus will shift to fostering more specific collaboration approaches and extending the scope of the WTB network to neighboring federal states and international partners, e.g. within the Euroregion Pomerania.

8. COSTS
The project has a budget of € 266 668 for three years. The major expense factor is personal costs, covering a full-time employee for the whole duration of the project with a total amount of € 213 099. Additional budget posts are office equipment, consumables, public relations and travel costs.

9. FUNDING
Reflecting the integrated collaborative approach of the WTB project, the funding is split between actors from the triple helix. The major part (€ 200 000) of the total project costs is publicly financed by the Ministry of Economy, Construction and Tourism of Mecklenburg Vorpommern using funds from the European Structural Fund (ESF). The University of Greifswald and the Chamber of Industry and Commerce Neubrandenburg each contributed € 33 000, so that in sum a quarter of the whole project costs was funded by actors from academia and business.

OUTCOMES & IMPACT

10. OUTCOMES
The outcomes of the project can be summarized along the indicators of success from the WTB reports. Numbers are available for the first half of the project period, from early 2011 until June 2012.
### Indicator of success

<table>
<thead>
<tr>
<th>Indicator of success</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business contacts</td>
<td>74</td>
</tr>
<tr>
<td>Technology transfer and cooperation</td>
<td>45</td>
</tr>
<tr>
<td>Initiated R&amp;D-projects</td>
<td>26</td>
</tr>
<tr>
<td>Patents</td>
<td>0</td>
</tr>
<tr>
<td>Events</td>
<td>88</td>
</tr>
<tr>
<td>Public Relations</td>
<td>13</td>
</tr>
<tr>
<td>Further activities</td>
<td>14</td>
</tr>
</tbody>
</table>

As can be seen, most activities can be placed in the category of basic “groundwork” for the development of UBC. In this context it also has to be noted that the indicators “technology transfer and cooperation” and “initiated R&D-projects” are broadly defined, thus also including activities like screening of ideas, mediating first contacts etc. This explains the comparatively large numbers in these sections. However, also in the context of more elaborated UBC projects first successes can be noticed. Most prominently, the WTB in Greifswald mediated a € 1.2 million collaborative research project between the University of Greifswald and BMP Bulk Medicines & Pharmaceuticals GmbH, backing and stimulating the project from the development of the project idea through the funding application phase until the project start in early 2013.

### 11. IMPACTS

The following table gives an overview of the major short- and long term project impacts as well as the respective beneficiaries:

<table>
<thead>
<tr>
<th>Impact</th>
<th>Beneficiary</th>
<th>Short- and/or long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised awareness of UBC</td>
<td>Business and academia</td>
<td>Both</td>
</tr>
<tr>
<td>Brokering of skilled personnel</td>
<td>Business</td>
<td>Short-term</td>
</tr>
<tr>
<td>Establishment of regional UBC-networks</td>
<td>Triple helix</td>
<td>Both</td>
</tr>
<tr>
<td>Concrete projects</td>
<td>Business and academia</td>
<td>Short-term</td>
</tr>
</tbody>
</table>

### 12. INVOLVED STAKEHOLDERS AND BENEFICIARIES

<table>
<thead>
<tr>
<th>Beneficiary/ stakeholder</th>
<th>Type of benefit/ description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>Information on UBC, funding opportunities, potential partners and spheres of collaboration, access to the university via a dedicated contact person, access to skilled personnel; mediation of cooperation</td>
</tr>
<tr>
<td>Academia</td>
<td>Information on UBC, funding opportunities, potential partners and spheres of collaboration, access to business actors, sensitization for the benefits of practice-oriented research; mediation of cooperation</td>
</tr>
<tr>
<td>Government</td>
<td>Establishment of UBC-related networks and panels; strengthening the competitiveness of regional SME’s; establishment of knowledge based jobs; contribution of the WTB to the development of a regional innovation strategy</td>
</tr>
</tbody>
</table>
13. AWARDS / RECOGNITION
The WTB approach has been covered by different online and printed magazines and newsletters. For detailed information, please see section 17.

14. PRIMARY CHALLENGES
For the ongoing success of the project, the major challenge concerns the institutionalisation of the WTB approach. Given the extensive social capital invested, it is highly desirable to maintain long-term continuity in staffing. As already described above, the University of Greifswald will extend the project for at least one more year. Nevertheless, securing long-term funding for the position remains one of the major challenges for the upcoming years.

The strings attached to public funding also pose a considerable obstacle to the implementation of both the WTB network and innovative R&D-projects resulting from WTB activities. The bureaucratic nature of the European Social Fund is reflected in the complex, time consuming application process for funding, the slow evaluation of applications, protracted contract negotiations, and reporting requirements.

15. SUCCESS FACTORS
Key factors related to the success of the project are the personal skills of the WTB, the cooperation within the WTB network and the institutional embedding of the WTB.

Personal skills of the WTB: due to the large amount and special importance of personal contacts, the WTB needs to have excellent communication skills. Furthermore, the WTB requires a sound knowledge of the regional business and research landscape to facilitate cooperation and mediate concrete project ideas. Additionally, the holder of the position should have experience in the area of knowledge transfer.

Cooperation within the WTB network: As stated above, the WTBs of the five HEIs in M-V form a state-wide network. Persistent communication and cooperation in the network is necessary to reduce transaction costs and duplication of work and to profit from possible synergies. Furthermore, via the cooperation and exchange of information between the individual WTBs, flexible and effective networks of competence are established which can be employed in cases of project initialization and implementation.

Institutional Embeddedness: It is highly important that the WTB is embedded in a UBC-friendly environment. In the case of Greifswald, the WTB is based within the Centre for Research Support and Commercial Services (Zentrum für Forschungsförderung, ZFF) of the university. This institutional solution facilitates the creation of synergies and is of vital importance in one of the most crucial areas of UBC, the question of funding opportunities. Since the ZFF is primarily concerned with the acquisition of third-party-funding, intensive
THE INDUSTRY-ACADEMIA LIAISON OFFICER

cooperation is especially useful in the concrete realization of project ideas. Furthermore, it proved helpful for the WTB to be an integral member of the university in terms of contacting scientists, influencing processes and improving the R&D-environment. Being associated to the chamber of industry commerce and commerce, too, raises the awareness and acceptance in companies.

16. TRANSFERABILITY
The general transferability of the presented approach is considered to be high, since the implementation of the approach does not require specific preconditions. The project is especially suited for other economically underdeveloped regions with a comparatively low level of institutionalised UBC.

FURTHER INFORMATION

17. PUBLICATIONS / ARTICLES


18. LINKS

- http://www.wtb-mv.de/
- http://www.uni-greifswald.de/foerdern/wirtschaftstransferbeauftragter.html

19. KEYWORDS

University-business-contacts, industry-academy liaison officer, economically underdeveloped region, R&D-platforms
20. PUBLIC CONTACT DETAILS

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ACCENT — ACCELERATING ENTREPRENEURSHIP
AN EXAMPLE OF ENTREPRENEURIAL DESIGN THINKING FOR TRANSDISCIPLINARY ENTREPRENEURSHIP EDUCATION AND THE WAY TO BECOME AN ENTREPRENEURIAL UNIVERSITY

By Harald von Kortzfleisch, Sandra Speer & Kornelia van der Beek
GENERAL INFORMATION

TITLE OF THE CASE
ACCENT – Accelerating Entrepreneurship

SALES PITCH
An example of entrepreneurial design thinking for transdisciplinary entrepreneurship education and the way to become an entrepreneurial university

ORGANISATION
University of Koblenz-Landau

COUNTRY
Germany

AUTHORS
Harald von Kortzfleisch
Sandra Speer
Kornelia van der Beek

NATURE OF INTERACTION
☑ Collaboration in R&D
☐ Academic mobility
☐ Student mobility
☑ Commercialisation of R&D results in science
☐ Lifelong learning
☑ Curriculum development and delivery
☑ Entrepreneurship
☐ Governance
☐ Other:

SUPPORTING MECHANISM
☑ Strategic instrument
☐ Structural instrument or approach
☑ Operational activity
☐ Framework condition

UIIN GOOD PRACTICE SERIES
Case study written by: Harald von Kortzfleisch, Sandra Speer & Kornelia van der Beek
www.uiin.org
1. SUMMARY
The objectives of entrepreneurship education and start-up support include idea creation and entrepreneurial attitudes for all students. Entrepreneurial Design Thinking has been implemented as a transdisciplinary overarching approach and is institutionalized in form of the Entrepreneurial Design School. Teacher trainers are seen as multipliers for entrepreneurial culture at schools and long term impact on the society. Students in research fields close to the market will be additionally addressed by innovation labs in the fields of ICT and environmental sciences. A multi-layer evaluation design is implemented including specifically developed instruments, such as the ‘entrepreneurial climate index’. In 2013, the University has been selected as ‘Entrepreneurial University’ within the EXIST framework of the German Federal Ministry of Economics, which created another momentum to even more priorities efforts and to secure the co-ordination and development of an entrepreneurial culture with ‘ACCENT accelerating entrepreneurship’.

2. BACKGROUND
The University of Koblenz-Landau with about 13,000 students, 500 lecturers, and 400 staff members is situated in two towns: Koblenz (Middle Rhineland region) and Landau (Palatinate region) with a central administrative entity situated in-between this two campuses (in Mainz). The University has numerous partnerships with foreign institutions of higher education, mostly universities. The University is relatively small in size and the youngest in Rhineland-Palatinate. It has as an especially strong reputation for research and education in computer sciences, environmental sciences, psychology and teacher education.

Three main target groups are distinguished: students in research fields close to the market (top-level group), students in other fields (broader group) and third teacher trainees (multipliers). The latter are nearly up to 50% of the overall students in Koblenz-Landau. This has implications for the strategy of the Entrepreneurial University. Future teachers are less perceived as future entrepreneurs themselves, but intrapreneurs and, more important, multipliers for strengthening an entrepreneurial culture in Germany.

3. OBJECTIVES
The primary objectives are to:

- Increase creativity for new venture creation and scientific entrepreneurship via Entrepreneurial Design Thinking
- Enhance innovative entrepreneurship education for multipliers
- Strengthen an entrepreneurial culture within the University
4. RESPONSIBILITY
The responsibilities for successfully implementing the entrepreneurial activities at the University as a whole were first anchored at the Institute for Management (IfM) (University of Koblenz-Landau, Campus Koblenz) and start-up offices created at both university locations (Gründungsbüros). From 2013 onwards, the newly created Central Institute for Scientific Entrepreneurship & International Transfer (CIfET) is the core institutional entity for steering and coordinating of entrepreneurial activities through all faculties and academic disciplines of the University. Especially strong ties exist with the Faculty for Informatics in Koblenz, where most of the students study computer science (B.A. and M.A.) and the School for Entrepreneurial Design Thinking (ED-School) within the University Koblenz-Landau. The latter is the organizational entity for inter- and transdisciplinary entrepreneurship education founded in 2010. The head of the CIfET (Prof. Dr. H. von Kortzfleisch) is at the same time professor at the Institute for Management and director of the ED-School. This guarantees that research and practice are strongly coordinated for strengthening the Entrepreneurial University as a mainstream activity at the systems-level, but also for developing teaching materials as well as implementing new approaches and promoting entrepreneurship through education, training and start-up support across all faculties.

Implementation & Funding

5. STRATEGY & ACTIVITIES UNDERTAKEN
Entrepreneurial activities started with the Entrepreneurship Professorship in 2007 and have been systematically intensified. Besides anchoring entrepreneurship education and research, entrepreneurship start-up counseling activities have been implemented. Special projects, such as ‘Hobbypreneurship’, and especially the ‘Koblenz Network of Open Entrepreneurship Engineering’ (KOpEE) helped in this step-wise process to reach all students and to expand entrepreneurship education beyond the core faculties across the whole University.

On the systems-level, the first University patent policy in Germany was introduced. Networking and institutionalization (School of Entrepreneurial Design Thinking; Central Institute for Scientific Entrepreneurship & International Transfer) within the University as well as with external stakeholders were key factors followed by further research related activities (Junior Professorship for Technology and Innovation Management; Germany’s most important international entrepreneurship conference “G-Forum”).

From 2013 onwards, even more excellence in entrepreneurship can be fostered by ‘ACCENT Accelerating Entrepreneurship’ at the overall University.

So three phases can be distinguished:

a) Phase one: building up
b) Phase two: networking and institutionalization
c) Phase three: excellence
6. MONITORING AND EVALUATION
The University Koblenz-Landau has implemented a monitoring and evaluation system, which encompasses various levels for summative as well as formative functions.

The start-up office at the University Koblenz-Landau (Gründungsbüro) developed an ‘index of entrepreneurial climate’. This index is mainly focusing on the personal background, the disposition of the students to develop entrepreneurial activities, but also on the perception of current entrepreneurial activities within the University. A first survey has been conducted at the University Koblenz-Landau and this survey will be further developed and carried out regularly. Thereby, changes can be well measured and additionally it has formative functions for further improving entrepreneurship support. Another instrument of special relevance is the F-DUP, which has been developed at the University Koblenz-Landau (Müller 2000, 2001) and is widely used in Germany for assessing entrepreneurial attitudes and capabilities, which are relevant for generally evaluating entrepreneurship education activities but also start-up coaching or team building. In our case, the F-DUP is also used for broader, regular students’ assessments. In addition, entrepreneurship education and start-up coaching processes are regularly being evaluated. Additionally, for evaluating the Entrepreneurial University as a whole, the University Entrepreneurial Scorecard (Gibb 2012) will be used in combination with the Common Assessment Framework (CAF 2013).
7. **SUSTAINABILITY MEASURES**

- Integration into education across all faculties, students get credits for entrepreneurship education
- Innovative entrepreneurship education implementation (innovation labs in environmental sciences and in computer sciences)
- Institutionalization within the University structures

8. **COSTS**

The main costs are staff costs, currently seven full-time staff equivalents plus additional administrative support. To a much lesser extent infrastructure costs occur, such as infrastructure for the Entrepreneurial Design Thinking-School. However, in 2013, an investment in an innovation software platform has been undertaken in order to support the innovation labs.

9. **FUNDING**

The entrepreneurship related activities of the University of Koblenz-Landau are not relying on funding from the University itself and with its very specific profile cannot either rely on income from e.g. patents or similar sources from previous business start-ups either. Funding is based on regionally and nationally financed third party-funded projects. For example, the one-stop agency "start-up office" (Gründungsbüro) is financed by the Ministry of Education, Science, Training and Culture of Rhineland-Palatinate and EFRE. Also the smaller specific projects, such as ‘hobbypreneurship’, which has a regional orientation, is funded by the state ministry. Within the framework of the German Federal Program EXIST (German Federal Ministry of Economics) the University of Koblenz-Landau has been awarded the EXIST III project in 2008 and in 2013, the University has been selected as ‘Entrepreneurial University’ (Gründerhochschule). So, funding of 1.7 million € is assured for three years time with potential extension for two more years. Additional funding is coming from research on
entrepreneurship. The University, i.e. the Central Institute CIfET has been so far very successful in the acquisition of public funds and aims at continually following this strategic orientation. Further funding is coming from private sponsorships.

OUTCOMES & IMPACT

10. OUTCOMES
Besides entrepreneurship education in the framework of research seminars and lectures, special targeted Entrepreneurial Design Thinking workshops: More than 500 participants in the courses so far over the last six years.

From 2009 until 2012:
- Six out of thirteen submitted EXIST-applications for start-up funding have been accepted
- 160 intensive start-up coachings have been delivered and finally 40 start-ups were created

11. IMPACTS
- National visibility of being excellent in entrepreneurship education and infrastructure
- An indirect impact could be the creation of a role model for entrepreneurial teacher education. Today, it is too early to see any effects in this regard, but will be evaluated in the future.
- Regional strengthening in terms of Koblenz-Middle Rhine as a Technology and Science Region
- Strengthening of ties between the University in Koblenz and industry as well as other local stakeholders (technology center; incubator; chamber of commerce, chamber of crafts ...)
- First alumni start-ups became strong role-models for students and researchers
- International network with partners from top universities

12. INVOLVED STAKEHOLDERS AND BENEFICIARIES
In 2012, while preparing the ‘ACCENT Accelerating Entrepreneurship’ proposal, all key stakeholders within the University from central institutes and across all faculties have been contacted and involved. Additionally, an international advisory board has been set up to learn from international best practices as well as to strengthen cooperation with international partners in entrepreneurship education and research.
With an organization structure of two campuses in two different locations, the University of Koblenz-Landau is tied to different regional innovation systems. The University in Koblenz has a strong focus on computer science and is tied to regional industry clusters, especially IT and inorganic material (glass/ceramics). Whereas the Landau region is very much characterized by vine-making and the University in Landau has strong research capacities in environmental sciences. For each of the locations, regional transfer boards with central stakeholders from private businesses and intermediaries have been created. Thereby, transfer to business, the wider region and society can be assured, but however, have to be strengthened in Landau.

Alumni business founders are seen as important stakeholders, as role models for potential student entrepreneurs, but also as new regional players with special strong ties to the University.

In Koblenz strong networks and joint entrepreneurship education activities with other higher education institutions exist (University of Applied Sciences Koblenz, WHU Otto Beisheim School of Management) so that the expertise has an impact beyond the boundaries of the own University.

For teacher education special agreements exist with so-called Campus Schools in Koblenz and Landau so that new teaching concepts can directly be tested and implemented in school settings.

13. AWARDS / RECOGNITION
In 2013, the University of Koblenz-Landau has been selected to become ‘Entrepreneurial University’ (within the German EXIST framework). Today it is one out of twenty-two ‘Entrepreneurial Universities’ and the only one in Rhineland-Palatinate.

14. PRIMARY CHALLENGES
A very specific challenge is that the University has faculties at two different locations (Koblenz and Landau) and is thereby linked to two different innovation regions. The University campus in Koblenz has currently stronger ties to the region and regional interconnectivity has to be further strengthened in Landau. Second, this means that entrepreneurship support structures and educational programs have to be offered in parallel because students merely commute between the two locations. This duplication involves higher costs compared to universities with a one-site campus.

Currently, there is no specific reward system for professors and research staff in place. The University does not provide specific incentives for entrepreneurial activities. The University just starts implementing two innovation labs, one in ICT and another in environmental
sciences, which are linked to the two regional profiles of Koblenz and Landau. Until now, the University Koblenz-Landau has been successful in assuring the funding situation. However, this challenge remains for the future and new ways for receiving funding have constantly to be identified.

15. SUCCESS FACTORS
The main driver for success is the continuing high-level commitment across all faculties and a strong networking approach within the University (with its specificity of two campuses).

Secondly, the specific approach of Entrepreneurial Design Thinking is very open to all disciplines, action-oriented and not only linked to business administration respectively business planning. Entrepreneurial Design Thinking develops a broader understanding to the field of scientific entrepreneurship. An entrepreneurial opportunity starts with the observation of a real-life problem and continues with its scientific solution through innovation. Invention-driven outputs from researchers can also be the starting point of a creative venture processes, Entrepreneurial Design Thinking promotes a creativity-supporting process, and entrepreneurial teams are enabled to test ideas faster especially with using prototyping. Entrepreneurial Design Thinking has proved to be useful for students from all faculties and is often a starting-point for further interest in entrepreneurial topics and activities.

It is also used for teacher education, with teachers being future multipliers of entrepreneurial attitude and culture, but also future intrapreneurs.

16. TRANSFERABILITY
Many aspects of the programs and the networking are transferable. The case of the University of Koblenz-Landau provides key learning points specifically for:

a) General entrepreneurship education, with its Entrepreneurial Design Thinking approach,
b) Entrepreneurship education for teachers (multipliers).

The evaluation design is relevant for all Entrepreneurial Universities.
17. PUBLICATIONS / ARTICLES


18. LINKS

- http://www.uni-koblenz-landau.de/koblenz/fb4/institute/ifm/agvonkortzfleisch/Team/korflesch/zur%20Person
- http://www.uni-koblenz-landau.de/zifet/
- http://www.gruendungsbuero-koblenz.de/
- http://www.kopee.de/
- http://www.gruendungskultur.de

19. KEYWORDS

Entrepreneurial design thinking, scientific entrepreneurship, evaluation
20. PUBLIC CONTACT DETAILS

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THE CASE OF THE UNIVERSITY OF SHEFFIELD (TUOS) INTERNATIONAL FACULTY, CITY COLLEGE
AN EXAMPLE OF AN ENTREPRENEURIAL MODEL FOR INTERNATIONALISATION OF HIGHER EDUCATION

By Panayiotis H. Ketikidis, Yannis Ververidis & Petros Kefalas
The case of The University of Sheffield (TUOS) International Faculty, CITY College

An example of an entrepreneurial model for internationalisation of higher education.

TUOS International Faculty, CITY College

Greece, United Kingdom, Bulgaria, Romania, Turkey, Albania, Serbia, Ukraine

Panayiotis H. Ketikidis
Yannis Ververidis
Petros Kefalas

☑ Collaboration in R&D
☑ Academic mobility
☐ Student mobility
☐ Commercialisation of R&D results in science
☐ Lifelong learning
☑ Curriculum development and delivery
☑ Entrepreneurship
☑ Governance
☐ Other: Development of UBC

☐ Strategic instrument
☐ Structural instrument or approach
☑ Operational activity
☐ Framework condition
1. SUMMARY
Entrepreneurialism and internationalisation have been one of the main drivers for change in the higher education sector. In this case study, we present our experience and elaborate on the case of CITY College (based in Thessaloniki, Greece), as a model for international development. The case has the unique characteristic that it has evolved as an International Faculty of the University of Sheffield (TUOS) not co-located with the other Faculties of the University (based in Sheffield, United Kingdom). We also show how the College's organisation structures and entrepreneurial culture across the institution facilitates the implementation of fast moving, market oriented, cross boundary operations in South Eastern Europe. These operations include the distributed delivery of postgraduate and undergraduate programmes through a “flying faculty” model, which we briefly describe. Finally, we present the outline and the results of the strategic plan which led to this successful education business model for internationalisation of higher education.

2. BACKGROUND
CITY College is a private college of higher education (HE) founded in 1989, in Thessaloniki, Northern Greece. In 1993, following a formal academic evaluation, TUOS and CITY College signed a formal agreement for collaboration, according to which the College assumed the responsibility of running a series of University's programmes in Thessaloniki. TUOS validated all the undergraduate and postgraduate courses offered at the college and awards its Bachelor honours and Masters degrees.

After three years of close monitoring and constant inspection, the University recognised CITY as:

"A college of high quality. The staff are very qualified and are committed to both teaching and research...Teaching standards are high...The college is impressive in terms of Quality Control and Academic Management". The University of Sheffield validated all the undergraduate and postgraduate courses offered at the IF and awards its Bachelor honours and Masters degrees (validation agreement)

The high academic standards and the establishment of mutual trust led to the official recognition of CITY College as an Affiliated College of TUOS in 1997. The recognition represented a concrete manifestation of the existing conditions and prospects of the CITY-Sheffield partnership. It was the first time that TUOS has awarded Affiliation status to an academic institution outside the UK. The College was under the constant academic inspection of the University through the moderation process and the Annual Review (ARTQ) evaluated by the University's Teaching Affairs Committee. The College passed through a periodical revalidation process every 5 years, which involves a number of external assessors. There was one in March 2002 and the last one was April 2007. The revalidation report states:

"The Panel is impressed by the achievements of CITY College in developing and delivering high quality programmes to serve a diverse yet distinctive student population recruited from the countries of the Balkan region. The Panel has found much to commend: The interpretation of the needs of the region by the Business Administration & Economics Department and EXED; The involvement..."
of students in the Computer Science Department in the partnership with business; The clear research culture within the Departments, notably its research collaborations with their South East European Research Centre and the evidence of international peer-reviewed publications;”

In 2008, the College and TUOS agreed to cement the future of this collaboration and their relationship. Since 2009, CITY College has become the International Faculty (IF) of TUOS, its sixth Faculty with the other five located at Sheffield. The five Sheffield faculties are comprised of 50 academic departments or schools and the International Faculty has three academic departments, namely Business Administration & Economics, Computer Science and Psychology, as well as a Humanities and Social Science Division, including English Language Support Unit. It has also two centres: the Executive Education Centre responsible for delivering the Executive MBA program and the South-East European Research Centre (SEERC). The academic departments offer six different undergraduate and ten postgraduate programs, all leading to a University of Sheffield degree. SEERC is an associated Research Centre and apart from conducting funded research it also offers a Doctorate program. Figure one depicts the organisation of the College in terms of Departments, Divisions, Centres and Offices.

While City College remains a private establishment and retains legal responsibility for matters covered by Greek law, the International Faculty operates alongside the other faculties in academic matters relating to all aspects of taught programmes and quality assurance arrangements. This means that CITY College is academically merged to the University and its academic organisational structure, but it keeps its own independent financial autonomy and governance. The evolution of this relationship from delivering
3. OBJECTIVES

The way for the International Faculty of TUOS to achieve an eminent presence in the region is the development and closely monitoring of the strategic plan of the College which drives the main objectives. The vision is “to be a leading International Institution, achieving excellence and making a difference in South East and East Europe with bases, presence, activities and impact in all countries of the region contributing to growth and development”. For more than one decade, the last three strategic plans include, apart from the usual strategic goals related to teaching, learning, assessment, support, research etc., goals directly focused on internationalisation and entrepreneurialism. The strategic plan (2010-2015) of the International Faculty of the University of Sheffield, CITY College, is focused to achieve an eminent presence in the region. The main objectives are:

- Be a leading International Institution
- Achieve excellence and make a difference in the South East and East Europe in teaching and learning
- Develop total entrepreneurialism
- Enhance students experience
- Develop services and outstanding quality
- Grow and expand internationally
- Reach out and engage more with business and the wider community
- Ensure financial sustainability and growth
- Promote and encourage a collective culture of innovation, risk taking, market-oriented and constant change across all members of staff
- Spread the entrepreneurial spirit.

4. RESPONSIBILITY

The Executive Board designs the overall Strategy. The College executive board, comprising the Principal and the three vice-principals (for marketing, recruitment and student affairs; for research, innovation and external relations; and for teaching and learning) liaise with the university’s executive board on strategic matters. The College administrative board is supported by the International Faculty Executive Board (IFEB), which reports both to the university’s executive board and the College administrative board. The IFEB comprises the Principal, the three vice-principals, the departmental heads, the centre directors, the Director of Communications and Marketing, and the College Registrar.

The IFEB is responsible to spread the entrepreneurial spirit all across the College. A significant role should be attributed to each member of the staff. Each one should be empowered, motivated and gradually involved in brainstorming and decision making processes on issues at college or departmental level. Thus, involvement of staff in entrepreneurial activities is more visible.
5. STRATEGY & ACTIVITIES UNDERTAKEN

First of all, regarding the entrepreneurial part, the executive board of the college approved a roadmap towards the development of total entrepreneurialism. The main objective is to promote and encourage a collective culture of innovation, risk taking, market-orientation and constant change across all members of staff. This can be achieved through a number of actions briefly outlined below. In a first instance, the strong central senior management group should be entrepreneurial not bureaucratic with effective and fast decision making. But most important all staff needs to be inculcated with what we call "the CITY entrepreneurial way for Higher Education" (HE), thus making them part of and owners of a modern, aggressive, quality-driven way for 21st century HE.

Another important aspect is staff development and support of staff in order to develop entrepreneurialism in teaching and learning as well as in research and technology transfer. The South East European Research Centre (SEERC) was founded in 2003 by the University of Sheffield International Faculty, CITY College. SEERC conducts multidisciplinary research in the fields of Enterprise, Innovation & Development, Information & Communication Technologies, and Society & Human Development. SEERC employs the existing research capacities of the University of Sheffield and its International Faculty CITY College, by facilitating collaborations between their research staff and by developing multi-disciplinary networks of researchers from across South-East Europe. The Centre was established in the region as a means of building capacity in the region for the benefit of the region. Figure two overviews SEERC’s activities.

![Figure 2: Overview of SEERC’s activities](image)

The role of a joint research centre, the South East European Research Centre (SEERC), is catalytic in such actions. SEERC’s mission is to support the stable and peaceful development of South East Europe by conducting pure and applied research in and for the region.

The industrial boards associated with each academic department would be an additional interface to the business community. Finally, an entrepreneurial spirit among students is
cultivated. The establishment of a students’ entrepreneurial club as well as support and encouragement for entrepreneurial ideas is central to this goal. Specialized courses in all disciplines are designed and delivered. Students are encouraged to participate in competitions that focus on idea generation. Extracurricular activities are designed to have an entrepreneurial dimension.

The promotion of the growth and diversification of our international student and staff body is a key objective. Firstly, the international and local students are integrated in an environment that supports and encourages a regional as well as a wider international “flavour” in programme curricula, syllabi and extra-curricular activities. Secondly, the possibility for student and staff exchanges with other institutions in the region is sought. Finally, the quest to recruit high calibre international staff is continued. Staff development includes, mentoring of new staff, staff appraisals, sabbaticals and career development. International and regional academics are more often invited to take part in the College’s activities and events. Finally, the internationalisation strategy includes the goals related to the development of relationships and cooperation with organisations and companies in the whole region of SEE to provide theoretical and practical input for education, run common projects and place students and graduate in job positions. The latter together with the exchanges mentioned above are the main actions that will increase the international experience of students. The International Faculty seeks to strengthen further the relations with academia in the region and through this to expand the provision of the flexible mode programmes to more countries in the wider region.

As a private institution, the accomplishment of the third stream mission (actually second stream in the absence of public funding), is among the top strategic priorities. Long before the emergent economic crisis and recession in Greece, the College strategic plan included items on increasing third stream income, internationalisation and entrepreneurialism. The clear distinction between academic and operations management (International Faculty structure and CITY College structure in the following Figure three) facilitated fast decision making.

![Diagram of Board and Committee Structure at University, Faculty, College, Departmental level](image-url)

**Figure 3: Board and Committee Structure at University, Faculty, College, Departmental level**
For example, the creation of the Executive Education Centre made the delivery of the MBA programme in other countries possible. Since 2006, the programme is delivered to another four cities: Belgrade, Bucharest, Kiev and Istanbul in addition to Thessaloniki.

These programmes are delivered in a "flying faculty" model (Kefalas 2012, 9) with staff from Thessaloniki or UK travelling over long weekends to deliver courses in the aforementioned cities. This is classified under the flexible and distributed provision models (QAA, 2010). The logistics involved in such a model are increasingly complex and require to be managed by dedicated administration staff. The model also resembles the twinning programmes where degrees of one university are delivered in two locations (Bernardo 2001, 18 & Burnett 2010, 134). Twinning arrangements are partnerships with local providers that facilitate knowledge transfer between foreign and local institutions. In the case of CITY College, the staff member who deliver the course in all locations are the same with physical presence according to GATS (Knight 2003, 3). This is an asset to quality monitoring and assurance because it guarantees to a great extent that the quality of teaching, learning and assessment is equivalent in all locations. Under specific circumstances, depending mainly on the host partner, an equivalent overall learning experience is maintained too. To support this, there are employed ways to enhance the overall learning experience. For example in the Executive MBA, all students from all cities meet twice during their studies, once for a week in Sheffield-U.K, and once for a week in Thessaloniki-Greece. These meetings provide excellent opportunities for networking as well as common extra-curricular activities, such as professional seminars, workshops, company visits etc.

Furthermore, the use of enhanced Learning Technologies as complementary to face-to-face contact proved to be absolutely essential for providing the desired quality of learning experience (Kefalas, 2011). Staff and students were trained and became familiar with learning technologies that facilitate everyday contact between teachers and learners. On-line or off-line communication through teleconferencing collaboration or wikis and fora respectively are comfortably employed as best practice.

Having acquired experience with the Executive MBA programme, another three part-time Master programmes in Marketing & Advertising, Backing & Finance and Entrepreneurship & Technology were launched in Sofia and Tirana in 2010. These programmes run under the same model and proved to be successful and very much demanded by students as well. Students do not move from their home cities, do not suspend their employment and can study in a rather flexible mode. In 2011, a full-time four years in Business Studies and Computer Science Bachelor’s programme was launched in Sofia. The first three years will be taught in Bulgaria while, during the last year, students will move to the International Faculty in Thessaloniki to attend their final year of studies. This employs partly the same distributed provision “flying faculty” model but also involves a private University in Sofia as well as a number of selected local academics who teach on the programme. The operation is fairly new and the International Faculty, CITY College is not yet able to report on the outcomes. Due to financial viability on the one hand and respect to local knowledge and expertise on the other some of the ventures are carried forward in collaboration with local institutions. It is, therefore, evident that the choice of the partners who facilitate the operations is crucial. Local HE institutions are audited and selected on the basis of specific collaborative criteria established by the University.

6. MONITORING AND EVALUATION
As a Faculty of TUOS, CITY College’s academic structure follows the norm with committees and boards ranging from open staff forum to teaching and learning committees and Departmental academic boards which systematically ease the process of monitoring and evaluation of any strategic goal of the college. In the context of its operations and growth, it is essential to note that, due to its financial autonomy, the College has a flexible...
management structure (Administration Board and Executive Board in Figure 3) that enables proper monitoring and quality assurance in all operations. Its characteristics are:

- a strong steering core with clear distinction of roles: a principal/general director and three vice-principals for (a) marketing, recruitment and student support, (b) research, innovation and external relations and (c) teaching and learning;
- involvement of all Heads of Departments and Directors of Centres in the executive board;
- decentralised decision making with calculated risk taking but at the same time centralised, College level financial management;
- strong entrepreneurial culture among the members of the executive board;
- mostly informal, fast moving flow of information both bottom-up and top-down, without rigid procedures such as waiting for scheduled formal meetings;
- combination of democracy with hierarchy.

Staff workload and promotion is governed through a precise academic resource and evaluation model that encourages excellence in teaching, research, administration and professional standing. Staff is urged and expected to take risks and therefore should be allowed to experiment and maybe in some cases fail.

The strategic goals related to Teaching Learning and Assessment are mapped against the Learning & Teaching Strategy of the University. The College has an international faculty learning and teaching committee (LTC), which considers business related to both undergraduate and taught programmes. Each year, the Quality Strategy and Enhancement Committee and the Learning & Teaching Committee agree on the priority of these goals. At lower level, specific actions are planned and implemented through the structures and staff of each Department. Departments within the College undertake an annual self-audit, and this is considered both by the LTC and the university quality and scrutiny committee. Departments in the College are subject to quinquennial review and policy compliance checks.

Furthermore, all proposals for new internationalization programmes are scrutinised by a Committee for Collaborative Provision. All the IF’s arrangements with other organisations are subject to full due diligence and approval through the Quality and Scrutiny Sub-Committee to which the Committee for Collaborative Provision reports. Programmes that are defined as “distributed”, once partner arrangements have been approved, are regarded as IF programmes and subject to the normal arrangements for IF programmes as described above. Programmes that defined as “collaborative” are managed by the IF but are also subject to approval and regular monitoring by the Committee for Collaborative Provision. All proposals for such programmes are initially supported by the International Relations Office of the University, working with the Chair of the Committee for Collaborative Provision.

7. SUSTAINABILITY MEASURES

The main sustainability measures maintained by the TUOS international faculty are the following:

- Open new markets / Develop and expand
- Do not depend on one market
- Diversify provision (new programmes, new modes of delivery)
THE CASE OF THE UNIVERSITY OF SHEFFIELD (TUOS)

- Increase income from research (develop research)
- New business models (partner universities, business partners – development through partnership models).

Also, heads of departments and academic directors escape from their traditional academic role and accept a new role that accommodates the involvement in strategies for outreach, marketing, recruitment and promotion of their department. In turn, Heads and Directors are responsible, apart from academic management, to create a departmental staff community that would be able to cope with creation of new markets, further exploitation of old ones as well as with implementing ideas for reaching the public and increase student recruitment.

8. COSTS
The main costs of making the Faculty operational are the following:

- Staffing
- Developing research
- Student centred approach (small classes, tutorials, etc)

9. FUNDING
The main funding sources of the Faculty are the following:

- Private funding from the owner organisation for the first five years
- Self-funded from then onwards
- Funding (students fees 80% - research 20%)

10. OUTCOMES
We have presented the case of CITY College in Greece, which is an International Faculty of TUOS, U.K. The International Faculty is a full academic part of the university but has a discrete identity and an appropriate degree of autonomy for decision making on issues such as strategic development and resourcing with respect to educational provision and management of educational resources.

The International Faculty concept which is the case with CITY College, is unique so far and it is not mentioned / discussed in the related literature. The College proved to be a very successful education business model for internationalisation of HE. The case illustrates the attempt by a local small education provider, to transform within two decades into an International Faculty of a top 1% ranked University in the world. We showed how the strategic vision and the entrepreneurial culture of the management, academic and administration staff contributed more effectively to enabled the dynamic shift of a local
institutions to a South East Europe knowledge-based hub. This is demonstrated by the results in student body and diversification as well as by the quality of education provision of an expanded programme portfolio, events and research collaborations developed in the region.

11. IMPACTS

Firstly, in addition to the previously reported results and achievements, the academic impact of the faculty’s teaching and research includes: contributing to the intellectual and cultural wealth of the nation and the region in fields related to our departments; shaping national and regional policy, including research-based policy advisory roles in governmental and regional bodies; transferring and exchanging knowledge contributing to the region’s regeneration and social and economic development; and supporting public understanding of our research.

Secondly, regarding the internationalization part, several dimensions related to mobility of staff and students, institution collaborations, research etc, can be identified. CITY College, through its strategic plan identifies a number of these and lists actions with which it can address them. There is a well-developed customer orientation, particularly in respect of relations with corporate clients. The Industrial Advisory Board composed of leading executives and managers from across the region regularly reviews the programme for relevance within the region and throughout the world. In addition, priority is given to the enhancement of the role of the College as an International Faculty of TUOS in SEE region, through activities, research projects, presence in regional workshops, conferences and symposia, partnerships, networking and strategic alliances. To this extent, a number of actions have been implemented which led to the gradual development of the College’s presence in the region and a number of agreements signed with the private and public sector as well as with governmental bodies of the states of the region. Future goals include the markets of East Europe and Middle East.

Thirdly, through SEERC, the University of Sheffield and its International Faculty, CITY College strengthens its position in South East European countries and beyond as an educational institution aiming to build the research capacity of the region by training PhD students, organising events and performing research related to specific South East Europe (SEE) problems. SEERC provides an opportunity for University’s academics to engage with the SEE region through:

- Supervising students from the region.
- Participating in networks of the region.
- Identifying project partners or contacts useful for research in any country in the region.
- Facilitating research in the region or assist in the promotion of its results.

One of the core goals of SEERC is to ensure targeted dissemination of its research findings particularly to South East Europe (SEE). Since 2003 around 50 events have been organised in the region to address topics of importance to South East European countries and also to bring together a range of actors from academia, business and the government to discuss scientific developments in sectors of vital interest to the Balkan countries and Europe. These events consist of international, regional and national conferences and workshops, such as:

- The annual International Conference for Entrepreneurship, Innovation and Regional Development (ICEIRD) – which alternates every year among South East European countries.
The annual Doctoral Student Conference (DSC) which brings together in Thessaloniki, every year, students from SEE and beyond (other European and non-European countries).

The bi-annual Balkan Conference of Informatics.

Apart from events, SEERC disseminates research findings to all relevant stakeholders, and actively tries to reach policymakers with policy briefing notes and policy recommendations for their country and/or region. For instance, in the ICT-WEBPROMS project (funded by the FP7 ICT programme), SEERC produced a report with policy recommendations on the potential of researchers from the Western Balkan countries to participate in the FP7 ICT programme. This report has been made available to the respective Ministries in the Western Balkan countries and has been taken up for discussion in individual meetings with policymakers.

Finally, the faculty's long term research goal is to be one of the top research institutions in the region, based on national, regional and international peer assessment including future metrics-based methods. This will be achieved by enhancing our reputation for world-class research of national, regional and international relevance and impact.

12. INVOLVED STAKEHOLDERS AND BENEFICIARIES

Students are the main beneficiaries of CITY College's services. This has been achieved so far by close monitoring of student progress using different means:

- Student-centred approach to support and services
- Small classes (preferably 20 students with the absolute maximum of 35 students per class)
- Low staff / student ratio
- Extra classes, in which weaker students are provided with additional exercises and tuition
- The “open-door” policy maintained by all members of staff; individual help is given to any student at any time
- Personal Tutorial System for all 1st Level students
- Formal advisory sessions

To ensure that student views are appropriately represented in the Faculty learning and teaching discussions, departments are asked to reflect on their learning and teaching each year, and to prepare a report for the appropriate Faculty, which sets out the main successes and challenges or issues for the department. Key performance indicators, such as the outcomes of student surveys and management information data inform the Reviews.

The Student-Staff Committee (SCC) - of each department meets at least once per semester. The Committee consists of all members of a department, administration staff from Student Services as well as all elected class student representatives. Issues raised by the SCC are disseminated in the form of meeting minutes, memoranda and personal communication to the appropriate level of the administration, depending on whether these matters refer to institutional level, course level, facilities, services etc. Actions taken by the Department and the IF are communicated back to the student representatives and all students in the form of a "You said – We did" report.
A second group of stakeholders related to CITY College is the main academic staff. At CITY College, staff development takes many forms. It may include additional income from competitive funding proposals, sabbatical, structured staff development activities, attendance at meetings and conferences (“away days”), development of educational materials and curriculum enhancement, and active association with professional bodies. Assistance with the travel cost, participation fee and cost of accommodation according to the yearly faculty allocation. New members of staff are appointed a mentor, who is an experienced member of the staff. The mentor provides assistance and monitors the new members of the staff so they can: get acquainted with the education process followed at the IF; understand and assimilate the IF’s mission; become familiar with the environment and the students; and finally understand and use the marking scale effectively.

A third group of stakeholders consists of the industry. The Industrial Advisory Boards (IAB) established at the IF aim to facilitate communication and collaboration with the industry in the wider South-East European area. The specific companies and organizations hire graduates and therefore share a common interest in the Departments goal to produce, at both undergraduate and postgraduate level, high calibre graduates, well-equipped to pursue successful careers. The major objective of the IAB is to advice the department in all educational, professional and research issues, complementing the feedback the Departments receive from scientific societies, quality assurance agencies and students.

Finally, a broader group of stakeholders consists of the entire South East European (SEE) Region. More specifically, research at SEERC (the research centre of CITY College and TUOS) focuses on contributing to the society by tackling issues of importance for the societies of SEE countries and by bringing together the appropriate stakeholders. Examples include:

Projects that are bringing the gap between scientific research and the market such as:

- INTERVALUE: Inter-regional cooperation for valorisation of research results (funded by South East Europe Transnational Cooperation Programme).
- VIBE: Venture Initiative in the Balkan Europe. (funded by the SEE transnational cooperation Program).

Projects that facilitate the dialogue among the innovation triple-helix (academia, industry, policy makers), such as:

- INNOPOLIS: Innovation Policy in University City Regions (funded by INTERREG IVC Interregional cooperation program).

Projects that enhance capacity of the SEE societies such as:


Projects that tackle major societal problems in SEE, such as:
SILVER: Successful Intergenerational Learning through Validation, Education and Research. Funded by Life-Long-Learning Grundtvig Program. Coordinated by the Inholland University of Applied Sciences – Centre for Research in Intellectual Capital (the Netherlands).

English in Europe. Opportunity or Threat? : The principal purpose of this project is to collect accurate comparative information on the role and effects of English in a range of contrasting regional contexts, some of which have been relatively little researched (e.g. English in the Balkans). It is funded by The Leverhulme Trust and coordinated by Professor Andrew Linn, from The University of Sheffield.

Multi-level Governance in South East Europe: Institutional Innovation and adaptation in Croatia, Greece, FYROM and Slovenia (funded by the British Economic and Social Research Council - ESRC).

SPiB: Smoking Prevention in the Balkans (funded by Cancer Research UK - Tobacco Advisory Group).

YOU RESPOND: Developing a good practice guide and training manual for young people’s participation in research, policy and practice developments to prevent and combat violence (funded by DAPHNE III programme, DG Justice, Freedom and Security, European Commission).

13. AWARDS / RECOGNITION
The College has been audited numerous times as a collaborative provision by the Quality Assurance Agency for Higher Education (QAA) and has been awarded a number of accreditations from British Computer Society (BCS), The Association of MBAs (AMBA), BAC, CMI and others. In the latest 2012 QAA Institution audit of the University, the International Faculty participated and contributed together with all other Faculties.

LESSONS LEARNED

14. PRIMARY CHALLENGES
The International Faculty has identified changes to funding and its impact on many aspects of higher education as a key challenge. It is also concerned to deliver on widening participation targets, develop strategies for the future of postgraduate taught education, and to provide the public information required by an increasing variety of stakeholders.

15. SUCCESS FACTORS
The case of CITY College could be summarised in an entrepreneurial model for internationalisation in higher education. Such model would contain a number of component attributes, many of which also characterise other successful entrepreneurial universities. However, added to those, specific success factors are extracted from the case.

The main four pillars which are responsible for assuring the success of the case of CITY College are (Figure four):
Effective management structure and operations
A distributed education provision model
Entrepreneurial and Innovative spirit
Internationalisation as a core strategic theme.

Management should be characterised by flexible and fast moving distributed decision making, accountability, combination of democracy with hierarchy and in general an entrepreneurial culture among all members of staff. Also, the collective culture for entrepreneurialism and innovative thinking as well as risk taking, should be the main characteristic of the faculty. Additionally, students, irrespectively of core discipline, should be cultivated with a strong entrepreneurial spirit inside and outside market-oriented curricula.

The "flying faculty" distributed provision model guarantees quality monitoring and high standards in all locations. It can be supported by learning technologies and innovative teaching and learning methods. It will be facilitated by a number of partners who are carefully selected to facilitate the entrepreneurial path defined in the institution's strategic goals.

Internationalisation should form the core strategic theme of the establishment. Students, staff, research activities in the wider region, delivery of programmes abroad, strategic partnerships for collaboration, etc. are core elements which further sustain the entrepreneurial model for internationalisation of higher education.

The evolution of this relationship from delivering franchised/validated programmes to becoming an integral part of the University is unique and by itself constitutes an extremely interesting case study which, however, falls out of the context of this paper.

Other relevant success factors are:
The commitment, enthusiasm and approachability of all staff which creates a positive learning environment for students

The expertise that has been developed in respect of managing cultural differences which could, and should, be shared with Sheffield colleagues and the wider HE Sector

The alumni relationships that the Departments has built and the use of alumni in a range of activities

The strong regional brand of the Department and its excellent reputation across the Balkan region. It was recognised that this was the result of a team approach with academics, administrative staff and the marketing team working together

The real world contacts and experiences available to students through the alumni links, Industrial Advisory Board and local business links, all of which contribute to students being more employable

The level and promptness of feedback to students on assessment and, perhaps even more so, the number of opportunities for students to evaluate and have input on their learning experience

The commitment to embedding the Sheffield Graduate Award, skills development and enterprise into the curricula

The community seminars, involving staff and students, which reflect the civic approach of the Department and is in keeping with the University’s ethos.

16. TRANSFERABILITY
Under the specific characteristics of this case, an appealing issue to be addressed is whether a well-established public university or a fairly newly established private university with similar mentality and culture could make a better choice for establishing a partnership.

17. PUBLICATIONS / ARTICLES


18. LINKS

- www.city.academic.gr
- www.shef.ac.uk
- www.qaa.ac.uk
- www.bsc.org
- www.mbaworld.com
- www.topuniversities.com

19. KEYWORDS

Internationalisation of higher education, entrepreneurial university, innovative university, international faculty, South East Europe.

20. PUBLIC CONTACT DETAILS

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## General Information

**Title of the Case:** JAMK Generator

**Sales Pitch:** An example of how to build an entrepreneurial university of applied sciences

**Organisation:** JAMK University of Applied Sciences, Jyväskylä

**Country:** Finland

**Authors:** Heikki Malinen, Riikka Ahmaniemi, Pasi Raiskinmäki

**Nature of Interaction**

- ☑ Collaboration in R&D
- ☐ Academic mobility
- ☐ Student mobility
- ☑ Commercialisation of R&D results in science
- ☐ Lifelong learning
- ☐ Curriculum development and delivery
- ☑ Entrepreneurship
- ☐ Governance
- ☐ Other (please specify)

**Supporting Mechanism**

- ☑ Strategic instrument
- ☐ Structural instrument or approach
- ☑ Operational activity
- ☐ Framework condition
1. SUMMARY

Since 2011, JAMK has developed a new “JAMK Generator” concept that combines tools for innovation and entrepreneurship assistance. The most important functions in the Generator are:

- Education on Entrepreneurship in study programmes
- Ideas to Innovations, which helps to evaluate the commercial potential of ideas and the commercialisation;
- Business Incubator, which helps students in developing their own businesses during the studies, and as a part of their studies; and
- Service Factory, which combines the ideas of the representatives of working life with our staff and students for creating new service innovations.

Accordingly, JAMK Generator supports the path from incipient idea to concrete projects, entrepreneurship, patents and licensing. So far, the results have been promising and increasing number of start-up’s but also patents and licensing have been achieved.

Furthermore, we have over 15 years of experience on Team Academy (studies for Bachelor’s Degree Programme), generating impressing results in student entrepreneurship and over 5 years of experience on Entrepreneurship and Business Competence studies (Master’s Degree Programme). We aim to further boost the entrepreneurship and innovations among the students and staff. Our goal is to expand the entrepreneurial education and make it include all the fields of study as well as further increase the number of innovations.

JAMK University of Applied Sciences is also a part of a larger innovation system in the area. The whole innovation system has been evaluated and during 2012 a new model for cooperation called Jyväskylä Business and Innovation Factory (BIF) was launched. This helps us to work more effectively and economically by developing common service concept with our partners and providing best and equal service to all clients.

This paper describes the recent development in JAMK in enhancing the innovations and entrepreneurial education. The main instrument for this since 2011 has been the JAMK Generator concept.

2. BACKGROUND

The universities of applied sciences and the universities form the Finnish higher education system. There are nowadays 25 universities of applied sciences which operate under the Ministry of Education and Culture. The reason for establishing the universities of applied sciences in the early 1990’s came from the needs to develop the national education system. The universities of applied sciences should operate in close contact with working life. The
Finnish system has followed the example of e.g. the Dutch and German systems (Rectors' Conference of Finnish Universities of Applied Sciences, 2013).

Main tasks of the University of Applied Sciences are education, applied research and development and regional development. JAMK offers education in eight fields of study: business administration, culture, health care and social services, natural resources, natural sciences, technology, communication and transport, tourism and hospitality management as well as teacher education. There are altogether 8500 students and 700 staff members at JAMK. The annual turnover exceeds 60 million €. The share of R&D is ca. 15%.

Central Finland, where JAMK University of Applied Sciences is located, is a province of 270,000 inhabitants. The province is strongly concentrated on forest sector, i.e. papermaking, wood products, forestry and machinery industries. In 2007-2011 the region had a cluster programme with the following clusters: New Generation Machines and Equipment, Dynamic by Bioenergy and Developing Housing (Regional Council Of Central Finland, 2011).

The aim of the clusters has been to help companies grow profitably, speed-up and support creation of business strategies, develop business culture in Central Finland, increase competitiveness of companies and industries and to gain more jobs, prosperity and well-being (Regional Council Of Central Finland, 2011). Remarkable loss of jobs has faced the province in forest, machinery and IT industries during the last few years. That was an essential reason behind the cluster programme and its objectives. JAMK was responsible for one of the cluster programmes, Dynamic by Bioenergy.

In Finland, national innovation programmes have already existed for about 20 years. Also in Jyväskylä, the work connected to Centre of Expertise Programme started in the early 1990’s. The main themes included paper manufacturing, energy technology, ICT, nanotechnology and tourism. JAMK has participated actively in the programme by collaborating with several companies mainly in R&D.

From the beginning of 2014, a new national innovation programme called Innovative Cities, will replace the Center of Expertise Programme. The main areas of interest in Jyväskylä are planned to be Bioeconomy, Cyber Security and Wellbeing (City of Jyväskylä, 2013).

A new model for innovation and business development is also included in the Innovative Cities programme. The main aims of the new programme will be to create new businesses, export and jobs (City of Jyväskylä, 2013). In the Innovative Cities programme, JAMK is one of the main players together with other educational institutions, local development companies, the City of Jyväskylä and numerous companies and public organisations.

This case study describes the recent development in JAMK in enhancing the innovations and entrepreneurial education. The main instrument for this since 2011 has been the JAMK Generator concept.

3. OBJECTIVES
JAMK University of Applied Sciences has set a challenging strategic goal – to be the best University of Applied Sciences in Finland in all its three main strategic areas, quality of learning, entrepreneurship and internationalization.
Also in entrepreneurship JAMK's aim is to be Finland’s most entrepreneurship-oriented university of applied sciences in 2015, which means that:

a) JAMK generates new enterprises and entrepreneurs;
b) JAMK provides customer-oriented enterprise and innovation services; and
c) an internal culture of entrepreneurship exists at JAMK.

JAMK Generator was established in 2011 with the aim of activating and bringing together innovation and entrepreneurial activities in different schools and departments. The services provided by the Generator are available to both students and staff members. The Generator promotes innovation and entrepreneurship among students by the following means:

a) entrepreneurship-related courses and entrepreneurial studies;
b) support services for establishing businesses originating at JAMK;
c) support services for commercialising innovations.

4. RESPONSIBILITY

The idea on stronger support on innovations and entrepreneurship was created by the management team in autumn 2010. The basis for enhancing these important goals were already laid in early 1990’s for entrepreneurship and in early 2000, ca. 10 years ago for innovations. In connection with the new strategy, the Board of Directors approved also the goals concerning the entrepreneurship.

The Generator started in the beginning of 2011 as a two-year project. The project was in administration under the vice-rector. Head of R&D and Innovations was nominated as a project manager.

The Generator is an umbrella for the whole University's actions for innovations and entrepreneurship. The main idea of the Generator is to assimilate substance knowledge of different fields to business knowledge. The Generator supports the path from incipient idea to concrete projects, entrepreneurship and/or patents and licensing. The operational environment of the Generator is composed around Triple Helix between JAMK, companies and public sector.

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Fig. 1: JAMK Generator and its main functions
5. STRATEGY & ACTIVITIES UNDERTAKEN

A. JAMK GENERATOR
Innovations and entrepreneurship have always been among the objectives of JAMK. The importance of these has gradually grown and in 2011 JAMK decided to start a project to strongly enhance innovations and entrepreneurship. A wide variety of different entrepreneurial and innovation studies and tools were already applied, but the coherence in operations was not sufficient.

At the same time, new goals (see previous section) were set in the new strategy, according to which JAMK aims to be the most entrepreneurship-oriented university of applied sciences in the country.

The new “JAMK Generator” operation principle was created by combining entrepreneurial education and innovation capabilities of the whole university. The new concept now combines the tools for innovation and entrepreneurship assistance, e.g. service factory, business incubator and entrepreneurial education in cooperation with working life (Fig. 1). It is also built to work as an umbrella for all entrepreneurial and innovation activities.

The main idea of the Generator is to assimilate substance knowledge of different fields to business knowledge. JAMK Generator supports the path from incipient idea to concrete projects, entrepreneurship and/or patents and licensing. The operational environment of the Generator is composed around Triple Helix between JAMK, companies and public sector.

B. EDUCATION ON ENTREPRENEURSHIP
Studies aimed at developing basic entrepreneurial skills and entrepreneurial attitudes are available to all students. Students can choose from a total of more than 40 courses aimed at developing entrepreneurship and/or innovation.

JAMK also offers a degree programme in entrepreneurship development leading to a Bachelor of Business Administration degree. The degree programme has been offered by university’s Team Academy already for 20 years. In the Team Academy the students start every year altogether 15-20 team companies (cooperatives). The learning happens by doing business with customers, reading books and learning with the team (Team Academy, 2013). The studies are full-time studies that normally take 3.5 years.

In the year 2012, the projects of Team Academy’s team companies reached the turnover of over 2 million euros. In 2012, 39 % of the students were working in their own company when graduating. The percentage grows to 47 % when the survey is repeated after two years of graduating. This is the highest percentage of entrepreneurs within the Finnish higher education institutions. The Team Academy model to learn by doing has spread to 16 places in Europe and one in Brazil (Team Academy, 2013).
Another degree programme with a strong focus on entrepreneurship is the degree programme in Entrepreneurship and Business Competence, which was established in 2007. This is a 90 cu programme leading to Master’s Degree. The programme operates on a part-time basis and the students are working while studying. Therefore the studies usually last from two to three years. As a prerequisite the students must have at least three years of working experience after the Bachelor studies, before they can enter the programme.

Students considering entrepreneurship can also make use of the services provided by Business Incubator. Growth companies are offered Launch Pad and Supercoach®-coaching as a service. (JAMK, 2012)

C. IDEAS TO INNOVATIONS – TULI AND PRODUCT TRACK

One goal has continuously been the refining of the ideas from R&D to innovations. This work started systematically almost then years ago in the form of TULI (from research to innovations) programme, which purpose was to refine research-based innovations. TULI-programme was funded by Tekes, the Finnish Funding Agency for Technology and Innovation. TULI helped different research organisations to evaluate the commercial potential of research-based ideas and the commercialisation process (Finnish Funding Agency for Technology and Innovation, 2011).

Based on the TULI project, JAMK developed its own innovation support process for promoting the innovation activities. The process includes the phases of activation, initial evaluation, evaluation, refinement and proof of concept (Fig. 2).

After the TULI project, JAMK has used the Product Track service, which is offered by the Foundation for Finnish Inventions. Product Track is meant for both the students and the staff members. The most promising ideas and inventions are first processed in the university’s own process and can then be transferred to the Product Track service.

Product Track is a national expert service of the Foundation for Finnish Inventions. It provides advice and support for the development of innovations. The inventions and innovative ideas of both private people and start-up companies are evaluated. The goal is to find promising ideas and inventions with potential for growth and international business. (Foundation for Finnish Inventions, 2013)
Product Track is divided into two phases: initial evaluation and development. The initial evaluation clarifies if inventions and ideas can be turned into a profitable business and provides the inventors with recommendations on how to proceed. Some of the inventions reach the development phase and are evaluated in more detail. It is ensured that they are suitable for development and possibilities for commercialisation exist. They are then developed further together with the inventor. (Foundation for Finnish Inventions, 2013)

Product Track follows quite closely the process described in Fig. 2.

**D. BUSINESS INCUBATOR**

JAMK’s Business Incubator has been part of the university’s services for the students and nowadays also for the staff. By participating in the Business Incubator’s activities, students can get credits for their degree. During the last two years the Business Incubator has operated under the Generator umbrella.

The participation in the activities of the Business Incubator can last from two months to two years, depending on the interests of the participants. The credit units received can vary from 3 to 60.

The Business Incubator offers the following services: a) Persons with a business idea or those acquiring or inheriting a company are offered a coaching process tailored to the business concept in question; b) Entrepreneurs are provided with coaching for growth entrepreneurship and c) Persons interested in entrepreneurship, but who do not yet have a business idea are offered an idea and a coaching process (JAMK, 2012). One example of a student’s path to entrepreneurship in Business Incubator is shown in Fig. 3.

![Fig 3: Example of student’s path to entrepreneurship in Business Incubator](image-url)

Setting up of businesses is also supported with advisory services (such as financial and legal advice), services of regional networks and product development and venture capital funding (JAMK, 2012).

The Business Incubator concept in JAMK is under evaluation and reconstruction and a new, developed concept will be launched later this year.
E. SERVICE FACTORY

Service Factory is also quite a new concept that is still under development. The project on developing the Service Factory started at the beginning of 2013. The aim is to find new ways for cooperation, where experts from the businesses, JAMK staff and students all work together to develop services, innovation and business. The Service Factory will be developed especially for SME’s.

In Service Factory JAMK will develop user-centered methods and processes as well as environment and spaces, which will support the cooperation. The core of Service Factory is the active role of all participants and learning by doing. The participants from the businesses can utilise the premises as an open innovation environment for productization of services and creating of new partnerships.

For SME’s, the multidisciplinary expert groups and student teams enable efficient way of generating innovations. Students will get closer look at the working life during their studies and experience a different kind of learning environment. The understanding on product development and innovation projects in general will increase both among the staff and students. We also expect growing number of start-up’s as a result.

G. JYVÄSKYLÄ BUSINESS AND INNOVATION FACTORY (BIF)

Developing new businesses and innovations is a goal of many organisations in Jyväskylä region. Potential entrepreneurs are not always aware of the best paths from an idea to a successful business. Therefore, a few of the most important organisations decided to join the forces in order to develop a common service concept and provide the best and equal service to all clients.

The main clients of BIF are students, post graduate students and researchers of universities as well as any other persons interested in establishing or developing their own business.

The founder organisations of the BIF are Jyväskylä Regional Development Company Jykes Ltd, Jyväskylä Innovation Ltd, JAMK University of Applied Sciences, University of Jyväskylä, Finnish Enterprise Agencies and Jyväskylä Business Incubator, operated by Suomen Yrityskehitys Oy.

All of the above-mentioned organisations previously had more or less their own approach in entrepreneurial education, innovation generation, business development and incubation. Simultaneously with the foundation of the BIF a common service concept was planned and service tools were chosen. The roles and the responsibilities of each organisation will be further clarified in the near future.

BIF is a new concept in Jyväskylä region. The target is to engage roughly 1000 persons to enter the service annually. Expected results are to create significant number of start-up companies and 10 – 15 growth enterprises annually.

Other important targets of BIF are to speed up the process from an idea to a new company, offer better service to clients and develop a better customer orientated concept. As a secondary objective, this will result in a more efficient and cost-effective process.
6. MONITORING AND EVALUATION
The results concerning the promotion of entrepreneurship and innovation are monitored using e.g. the following indicators:

- Number of Bachelor and Master Degrees
- The number of ideas considered
- Commercialised innovations
- New enterprises based on the results of R&D activities (JAMK as part-owner)
- Commercialised ideas
- Patent applications
- Annual revenue (in euros) generated by commercialised ideas
- Credits awarded in Business Incubator
- Number of enterprises established in Business Incubator
- Number of enterprises coached to growth in Business Incubator
- Number of students in Business Incubator
- New enterprises originating in Team Academy
- Proportion of entrepreneurs at graduation

7. SUSTAINABILITY MEASURES
Promotion of entrepreneurship is in the near future part of the curricula in all JAMK’s degree programmes. Students can participate in modes of study supporting entrepreneurship. There are plenty of services and support activities available for promoting entrepreneurship. In fact, there may be too many of them. Entrepreneurship is seen as enhancing JAMK’s image. The Team Academy is widely known. There are lots of positive things going on at JAMK and the number of new entrepreneurs has grown.

Another thing is to strengthen the work which was started a few years ago in the form of TULI-project (from idea to innovations). It is not possible to concentrate only on the R&D-based innovations, which often require a long time and a substantial R&D funding. Therefore also service innovations and the work done in Service Factory will be of great importance.

The whole local system will be developed together with the University of Jyväskylä, Jyväskylä Innovation Ltd and Jyväskylä Regional Development Company Jykes Ltd and local companies under the name of Jyväskylä Business and Innovation Factory (BIF).

There is also room for improvement in the manner in which entrepreneurship is measured. The measurements are of quantitative, not qualitative nature, and it is difficult to measure internal entrepreneurship. (JAMK, 2012).

8. COSTS
Major source, over 80 % of the costs has been labor costs of JAMK staff for activating, coaching and teaching the staff members and the students. A smaller part of the costs has become from the use of expert services like patenting, external evaluation of technology and market situation etc. Minor costs are also affected from purchasing of equipment and renting additional space.

The costs have been yearly ca. 300 000 € during the first two years (excluding the costs for running the regular study programmes and external projects).
9. FUNDING
From the very beginning it was decided, that the main operations will be funded by the University’s own funding received from the Ministry of Education and Culture. This was due to the close connection of work with the main tasks of the University.

At the same time, also external funds were granted. European structural funding was used for activating the staff members. During 2008-2013 JAMK and the University of Jyväskylä received ca. 300 000 € for creating a new innovation culture within the universities. For enhancing the innovations, funding of ca. 400 000 € (2008-2013) was received from the Finnish Funding Agency for Technology and Innovation and from Foundation for Finnish Inventions.

OUTCOMES & IMPACT

10. OUTCOMES
Some of the main results from 2010 – 2012 can be seen from Table 1.

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of degrees, Bachelor / Master in entrepreneurial degree programmes</td>
<td>56/13</td>
<td>53/18</td>
<td>58/29</td>
</tr>
<tr>
<td>New ideas</td>
<td>35</td>
<td>42</td>
<td>97</td>
</tr>
<tr>
<td>Ideas in innovation process</td>
<td>10</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Commercialized ideas</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Number of new business ideas coached in Business Incubator</td>
<td>28</td>
<td>46</td>
<td>105</td>
</tr>
<tr>
<td>Credits awarded in Business Incubator</td>
<td>180</td>
<td>460</td>
<td>510</td>
</tr>
<tr>
<td>Number of enterprises coached in Business Incubator</td>
<td>3</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Number of start-up’s in Business Incubator</td>
<td>2</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Number of start-up’s in Team Academy</td>
<td>3</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Number of start-up’s from R&amp;D activities</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Proportion of entrepreneurs at graduation</td>
<td>4 %</td>
<td>4 %</td>
<td>6 %</td>
</tr>
</tbody>
</table>

Table 1: Main result on entrepreneurial and innovation activities

11. IMPACTS
As can be seen from Table 1, the start of the Generator at the beginning of 2010 has in many indicators affected in a positive way. Especially the number of start-ups and proportion of entrepreneurs at graduation seem to rise rapidly. Commercialised ideas (from university to
the companies) have lowered and probably been replaced by student’s or staff’s start-ups. However, the period of three years is too short to make any final conclusions.

12. INVOLVED STAKEHOLDERS AND BENEFICIARIES
JAMK University of Applied Sciences is located in region, which has concentrated strongly on traditional forest sector industries. However, loss of traditional jobs requires a growing number of new innovations and entrepreneurs. At the same time, though, the labor needs of present companies have to be fulfilled.

Nowadays, students and staff members recognize the potential of entrepreneurship and innovation, and the number of ideas generated as part of the activities has grown. However, commercialisation is still in its initial stages. The number of enterprises established by students is growing fairly rapidly but new businesses based on the results of R&D activities are set up at a slower rate.

According to an evaluation made in the students’ self-evaluation workshop, students feel, that they are strongly encouraged to become entrepreneurs. Students interested in entrepreneurship also find the entrepreneurial studies. Students are of the view that entrepreneurship should be seen in a wider context as a way of thinking, not only as an activity aimed at setting up an enterprise. Participants of the self-evaluation workshop also expressed the hope that the services were located in a single place (JAMK, 2012).

According to the students (JAMK, 2012), practical entrepreneurship involving a cooperative, such as the cooperative established to run a restaurant, provides the best learning experience in entrepreneurship. Students would also like to increase inter-disciplinary work aimed at promoting entrepreneurship.

JAMK has to take into account the existing working life and its labor needs. The majority of the graduates are naturally still employed by the local employers. The share of entrepreneurs is expected to rise from 4 % in 2010 and 6 % in 2012 to 10 % in 2020. JAMK also educates people to public sector, e.g. nurses and it is important to remember that the healthcare sector might not need so many entrepreneurs. However, it certainly needs new innovations.

Many organisations in the area are playing on the same field, and it requires some time to agree on the roles and cooperation. The conversation has started well and the cooperation between the organisations helps everybody to achieve better both common and organisational goals. It is not reasonable to make everything alone, but to join the forces to offer together the best service for prospective and existing entrepreneurs. This is in good progress in Jyväskylä Business and Innovation Factory (BIF).

13. AWARDS / RECOGNITION
In 2012-2013 the Finnish Higher Education Evaluation Council conducted an audit of JAMK. As an optional audit target JAMK had chosen studies preparing for entrepreneurship and the promotion of innovation work and entrepreneurship from the students’ perspective. The quality system fulfilled the national criteria and corresponds to the European quality assurance principles and recommendations. FINHEEC awarded JAMK with quality label that is valid for six years from the audit. (FINHEEC, 2013)
14. PRIMARY CHALLENGES
Since 2011 JAMK has developed a new Generator concept to better achieve the strategic goals. The goal is to expand the entrepreneurial education and make it include all the fields of study. Furthermore, JAMK seeks to increase the number of innovations, generated both within the university and together with the companies.

The idea is to combine the entrepreneurial education and innovation capabilities of the whole university rather than create a new unit responsible for all this. At the moment, strong development is going on and many things are developed simultaneously. Later on, the most relevant methods and concepts have to be chosen and strengthened.

Changing the university’s role from educating the “job takers” to “job makers” is neither easy nor fast. The change in attitudes and mindset requires a long time. Additionally, new skills are needed among the staff members. Moreover, new kind of staff members, with experience on entrepreneurship and coaching to entrepreneurship are needed. Naturally, concepts such as the Team Academy and Business Incubator have been in the forefront in making the change.

Although we cannot make any final conclusions on the effectiveness of the new Generator concept, we have statistics that show progress. Especially the number of start-ups and proportion of entrepreneurs at graduation seem to rise rapidly. We also believe, that by continuing systematic development we can continue to move towards the entrepreneurial University of Applied Sciences.

15. SUCCESS FACTORS
Main factors for successful promotion of entrepreneurship and innovation work are above all motivated students and staff members. This can be affected by activating the students from the beginning of their studies and staff members continuously.

In case of staff, the relevant skills are needed. Prior experience on entrepreneurship and different phases of innovation processes are essential.

The general attitudes towards the entrepreneurship in the society and in the University are also in a remarkable role. Strong regional innovation system helps the University to concentrate on its´ most essential role and guarantees help from external experts.

16. TRANSFERABILITY
Changing the University’s role towards entrepreneurial, the university must have a strong support from the top management. Still this does not help very far, if the staff members and the students can’t be involved. We see that this kind of change is possible and also other higher education institutions share the same possibilities.
In addition to education institutions, enhancing the entrepreneurship and innovation work can be a possibility to regions, which need the regeneration e.g. due to the loss of traditional jobs and industries. In all cases, it is important to create systems that fit best to the local conditions and local innovation eco-systems.

17. PUBLICATIONS / ARTICLES


18. LINKS

- Jyväskylä business and innovation factory http://jklyritystehdas.fi/

19. KEYWORDS

Entrepreneurial University, Entrepreneurship, Innovation, Incubator
20. PUBLIC CONTACT DETAILS

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HOW TO INTEGRATE THE VALORISATION INITIATIVE INTO UNIVERSITY RESEARCH AND EDUCATION

By Jochen Barth & Laszlo Determann
GENERAL INFORMATION

TITLE OF THE CASE  Service Science Factory, Maastricht University

SALES PITCH  How to integrate the valorisation initiative into university research and education

ORGANISATIONS  Service Science Factory (SSF), Maastricht University (UM), School of Business and Economics (SBE), Faculty of Health, Medicine, and Life Sciences (FHML), Maastricht Centre for Entrepreneurship (mc4e)

COUNTRY  The Netherlands

AUTHORS  Jochen Barth, Laszlo Determann

NATURE OF INTERACTION  
- ✔ Collaboration in R&D
- § Academic mobility
- § Student mobility
- ✔ Commercialisation of R&D results in science
- § Lifelong learning
- § Curriculum development and delivery
- ✔ Entrepreneurship
- § Governance
- § Other:

SUPPORTING MECHANISM  
- ✔ Strategic instrument
- ✔ Structural instrument or approach
- ✔ Operational activity
- § Framework condition
1. **SUMMARY**

As the funding of academic research and educational activities is becoming increasingly sparse and competitive, an increasing number of universities initiate and foster activities that can generate income from sources that are not publically funded. Nonetheless, entrepreneurial initiatives within universities are challenging due to the inherent nature of universities as non-profit organizations. This is the case study of a successful university initiative that currently employs 10 people and facilitates the co-creation of innovative services in client projects involving academics, students, and professionals. The way of working and key lessons in building this successful valorisation initiative will be presented. This case emphasizes the importance of involving all stakeholders and integrating research and education in the valorisation activities.

2. **BACKGROUND**

Maastricht University was founded in 1976, born from a need for an additional another medical faculty in the Netherlands, as ‘Rijksuniversiteit Limburg’. To distinguish this young university from other established Dutch universities, the initiators opted for a different system of education: PBL (Problem-Based Learning). The focus shifted from one-sided lectures towards a more interactive setting where students engage in an active learning process. Students work in small tutorial groups on academic or practical problems, guided by a teacher or tutor. The university has known fast growth over time, initially thanks to political support, and later as a result of the conscious decision to deviate from the university growth model then prevalent in the Netherlands. In 1984, the Faculty of Economics and Business Administration was established, and renamed to School of Business and Economics in 2009. The School of Business and Economics has a tradition of a strong business and economics research base and an international business and economics curriculum, with mandatory studies at universities abroad. All courses are provided in English. Besides that Maastricht University has a focus on educating students in entrepreneurship and maintains strong links with regional, national, and international stakeholders.

Maastricht University initiated the Maastricht Centre for Entrepreneurship (MC4E) in 2009 to promote entrepreneurship among students. The centre focuses on all different facets of entrepreneurship throughout the curriculum, and is accessible not only for business students.

In recent years, valorisation of knowledge became more and more important. SBE initiated a centre for Business Development and Knowledge Transfer (BDKT), that has a strong focus on valorisation and connecting large stakeholders in the region, which is home to three large campuses (Chemelot Campus, Maastricht Health Campus, Greenport Venlo). In 2010, Prof. Jos Lemmink, at the time Dean of the School of Business and Economics, founded the Service Science Factory, as an initiative for valorisation through collaborative service innovation projects. The Service Science Factory integrates knowledge from students, academics and professionals to develop service concepts. Since then, the Service Science Factory
completed over 25 projects, employs 10 full-time employees, and has established a strong foothold in the region.

**Approach towards entrepreneurship:**

Entrepreneurship policies in higher education can be divided into two categories: those focussed in establishing links with their stakeholders, and those that are more focused on entrepreneurship education of students (Gibb & Hannon, 2005). Policies in the first category focus on maximising the potential for commercialisation of ideas and creating value in society, recognizing the need for a diversified funding (from non-publicly funded sources) (Clark, 2004), and actively pursuing engagement with stakeholder communities, as well as accepting responsibility for local development (Gibb & Hannon, 2005). Maastricht University has a strong focus both on creating links with stakeholders and on entrepreneurship in the curriculum.

The latter is clearly visible in the Maastricht Centre for Entrepreneurship (MC4E), which “serves students throughout Maastricht University by providing opportunities to learn, by providing start-up support, and by helping young ventures to grow.” MC4E achieves this by offering entrepreneurship education across the university to students at bachelor, master and post-graduate level. They furthermore organize inspirational events, such as the Maastricht Week of Entrepreneurship and the Global Entrepreneurship Week, that allow students to network with international entrepreneurs, and help students to prepare and launch high impact ventures. MC4E was created with the support of local entrepreneurs and businesses.

Maastricht University furthermore focuses on creating strong links with (regional) stakeholders, and takes responsibility for local economic development. Maastricht University President Prof. Dr. Martin Paul illustrates this as follows:

UM is not only a knowledge institution of international importance, but also an economic motor for Limburg and the Euregion. Education and research are essential for economic development and structural improvements. High on our agenda for the coming years are research, valorisation, innovation, the dissemination of knowledge and the vitality of the population. Where factories and coal mines once brought prosperity and innovation, today’s economic dynamism is rooted in the study and application of the life sciences, health sciences, chemistry and new materials, as well as expertise in the areas of business, law and culture. These are Limburg’s ‘tickets to the future’ that, in the coming decade, will create new jobs for knowledge workers and others and lay the foundations for a healthy economic future for the southeast Netherlands.

To this end, the magic words are ‘open innovation’ and collaboration among knowledge institutions, governmental authorities and the business sector in the ‘triple helix’, as well as for strategic agendas like ‘Kennis-As Limburg’ and ‘Brainport 2020’. With regional parties from both sides of the border, but also well beyond it, we are continuing our efforts to bring together the worlds of research, education, business and society – because that’s where the magic happens. And that’s where we can lay the groundwork for genuine engagement in the European knowledge society.
Several departments at UM actively work on establishing and fostering these external links and cooperation. Business Development and Knowledge Transfer (part of the School of Business and Economics) focuses on knowledge valorisation, campus development and relations with SMEs. The Faculty of Health, Medicine and Life Sciences (FHML) initiated BioMedbooster to transfer technology and valorise on academic findings in the Life Science. The School of Business and Economics (SBE) and FHML collaboratively initiated the Service Science Factory, to create value for Maastricht University by bridging business and academia.

This case focuses on the Service Science Factory as an example that integrates the valorisation initiative into research and education within a university.

3. **OBJECTIVES**
The Service Science Factory was initiated to create value for Maastricht University in following forms:

1. Financial value
2. Strengthening the strategic network of the university
3. Applying academic expertise in ‘the real world’
4. Cross fertilization between theory and practice, as well as between academia and business
5. Integrating real cases into the learning experience of students
6. Stimulate collaboration between disciplines, irrespective whether these disciplines are found within or outside Maastricht University

4. **RESPONSIBILITY**
The Dean of SBE initiated SSF, with support from SBE and FHML. A professor was appointed as (scientific) director of SSF to ensure a strong focus on service science. In the early stages of development, an advisory board (with professors from different faculties) was established to provide strategic guidance. After two years a managing director was hired responsible for the daily operations and the business side of SSF. At that point the (scientific) director was appointed chair of the advisory board to focus entirely on research and education.

**IMPLEMENTATION & FUNDING**

5. **STRATEGY & ACTIVITIES UNDERTAKEN**

- Over 25 completed service innovation projects with interdisciplinary teams
- Summer school on service design and innovation
- Lectures on service related topics
- Involvement of students from honours programmes in projects
- 3 PhD candidates working on various service related topics
- Regular educational and inspirational events for students and local businesses
- Close collaboration with UM Post Graduate Education and a collaboratively developed executive master in business services
- Involved in international student exchange programmes

SSF has undertaken several activities for creating awareness. The Service Science Factory offered their services to Youp van het Hek, a famous Dutch comedian, who took action to unite customers who had a negative service experience with the helpdesk of a mobile telecom provider. This led to several publications in Dutch magazines, and an interview for a Dutch television channel. Within Maastricht University, SSF is closely embedded in the communication network. Several team members take part in the External Liaison Committee (ELC) of the School of Business and Economics. For student recruitment, SSF is present at several fairs organized by Maastricht University, as well as events organized by several other departments (such as the Maastricht Centre for Entrepreneurship). Furthermore, SSF annually organizes a case competition for students (Service Innovation Award) jointly with the RWTH Aachen University. Students worked on cases provided and sponsored by companies such as Lufthansa and Siemens.

6. MONITORING AND EVALUATION
Regular meetings are scheduled with members of the Service Science Factory advisory board (several professors from various faculties) about the strategic course of SSF. The Managing director proposes a vision and strategy on which the advisory board members provide feedback. Regular evaluation meetings are held with the board of the School of Business and Economics, who in turn discuss the developments with the board of Maastricht University. The annual budget is evaluated during quarterly meetings, with a focus on financial performance.

7. SUSTAINABILITY MEASURES
Although SSF is dependent on acquiring external clients, it is also backed up by its role in the regional economic and knowledge agenda. SSF provides services that are in line with the agenda of the Province of Limburg, which in recent years has seen a shift towards strengthening the local economy through a focus on service innovation. These strong ties to the region give SSF the opportunity to play a key role in initiatives by regional authorities and ensure proximity to available government funding. Recently, the province (Limburg) has been chosen as a model region within the European Service Innovation Centre (ESIC) program by the European Commission.

8. COSTS
SSF has an annual budget of around € 850k. Expenses for staff, housing and facility services make up for almost 70% of this budget. Other expenses are operational expenses, promotion costs and travel expenses.
9. **FUNDING**
SSF received € 850k in funding, spread over a period of 4 years. The funding comes from SBE, FHML, Maastricht University and the Dutch government. The remaining budget is covered with revenue from projects and education.

10. **OUTCOMES**
- 25 Service Innovation Projects
- Over 150 students, academics and professionals participated in these projects
- 10 Service Science Cafés: themed events to highlight the outcomes of the projects with in total more than 1000 participants from academia and industry.
- Summer school on service design and innovation
- Executive Master in Business Services
- Local authorities approached SSF to be a knowledge partner for service innovation programs
- International PhD seminar and International Academic Art and Science of Services Conference.

11. **IMPACTS**
An important impact of the undertaken activities is that SSF now acts as a knowledge provider for regional economic development. For the local community, SSF hosted sessions with business owners from their neighborhood, to develop a shared vision for their street (Tongersestraat). This led to a public event supported by the city authorities to promote the businesses on the street to the local community.

The most important impact for Maastricht University is that students engage in a valuable learning experience working on real-world cases for real clients. Additionally, a client funded a Ph.D. position after positively evaluating a service innovation project.

12. **INVOLVED STAKEHOLDERS AND BENEFICIARIES**
- Maastricht University (students, academics, management), benefits through improved external relations, participation in projects and regional development
- The Köln International School of Design (Service Design Network), benefit through collaboration and student participation in projects
- Professionals participating in projects benefit through gaining new knowledge and expertise
SSF maintains a strong relation with RWTH Aachen University through collaboration in projects, research, and education.

The Province of Limburg and LIOF (Limburg Development and Investment Company) involve SSF in developing programs for local businesses.

13. AWARDS / RECOGNITION
The Service Science Factory was selected as a partner in an ambitious plan for economic development by the Province of Limburg (knowledge-axis).

LESSONS LEARNED

14. PRIMARY CHALLENGES
Despite strong support of key-players within Maastricht University, it proved to be challenging to get a broad commitment from across the university. Support that SSF receives is strongly dependent on people. SSF experienced that a relatively small number of academics show interest in working with external partners to apply their research in practice. A well-known struggle within universities is the incentive system (which focus on research output). This system should be revaluated if a university wants to strengthen their valorisation initiatives. Due to the non-profit nature of a university SSF found it challenging at times to operate in the commercial market. Acquiring enough new projects has proven to be the biggest challenge for achieving a financially sustainable organization.

15. SUCCESS FACTORS

- A team of staff entirely dedicated to the valorisation initiative
- Full time project leaders to manage client projects that can compete with the (consulting) market
- Professional recruitment since the project team is key to the success of a project. SSF assesses students in three rounds: CV & cover letter, preparing a presentation, and participation in an assessment centre with the client.
- Integration of research, business and education in the activities of SSF
- SSF is in line with the strategic development of Maastricht University (problem based learning, contributing to growth of the region).
- Adopting a new approach to project teams “teaming on the fly” (Amy Edmondson)

16. TRANSFERABILITY
The SSF approach has been received with enthusiasm by several other universities, especially since it’s a valorisation initiative of a non-technical university, due to its integration of research and education with ‘real world cases’. In the future SSF wants to develop a network of university partners who are interested to integrate the SSF approach.
with their university. This would not only increase the learning possibilities of (exchange) students, but also could strengthen collaboration between universities in research and education.

FURTHER INFORMATION

17. PUBLICATIONS / ARTICLES


18. LINKS

- http://www.maastrichtuniversity.nl
- http://www.servicesciencefactory.com
- http://www.talkinbusiness.net/?s=service+science+factory
- http://www.mc4e.nl/

19. KEYWORDS

Service design, service innovation, valorisation, problem based learning, regional economic development.
20. PUBLIC CONTACT DETAILS

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AN ENTREPRENEURIAL COLLABORATIVE APPROACH
AN EXAMPLE OF HOW TO FOSTER ENTREPRENEURSHIP AMONG STUDENTS THROUGH UNIVERSITY-INDUSTRY COLLABORATION

By Juan Ignacio Igartua, Nekane Errasti & Leire Markuerkiaga
## General Information

**Title of the Case:** An Entrepreneurial Collaborative Approach  

**Sales Pitch:** An example of how to foster entrepreneurship among students through University-Industry Collaboration  

**Organisation:** Mondragon University - Faculty of Engineering  

**Country:** Spain  

**Authors:** Juan Ignacio Igartua  
Nekane Errasti  
Leire Markuerkiaga  

**Nature of Interaction:**  
- Collaboration in R&D  
- Academic mobility  
- Student mobility  
- Commercialisation of R&D results in science  
- Lifelong learning  
- Curriculum development and delivery  
- Entrepreneurship  
- Governance  
- Other:  

**Supporting Mechanism:**  
- Strategic instrument  
- Structural instrument or approach  
- Operational activity  
- Framework condition
CASE STUDY PROFILE

1. SUMMARY
The present case study shows the entrepreneurial collaborative approach that the Faculty of Engineering from Mondragon University (EPS-MU onwards) is undertaking. Based on the collaborative model with companies and thanks to an annual Entrepreneurial Action Plan (EAP onwards) where collaboration with industry is carried out, there have been suitable mechanisms established for increasing the percentage of business ideas (generated by students) that are further developed as potential business projects.

2. BACKGROUND
EPS-MU is the Engineering School (Higher Polytechnic School) of Mondragon University (MU) a young university, created in 1997 by the association of three educational cooperatives, with the guarantee of an extensive career and experience in the world of education. These were Mondragon Goi Eskola Politeknikoa "Jose Mª Arizmendiarrrieta" S.Coop. (1943), ETEO S.Coop. (1960) and Irakasle Eskola S.Coop. (1976), which nowadays constitute the University’s two Faculties and School of Engineering (Higher Polytechnic School). EPS-MU has close to 1,900 students, supported by 211 employees of whom 158 are professors who teach and do research.

EPS-MU is nowadays a recognized teaching, training and research institution in the fields of Materials science, technology & manufacturing processes and electrical energy technologies (complemented with other knowledge areas). EPS-MU has an outstanding reputation in Spain for the development of university’s “third mission”. The commitment of EPS-MU for the fulfilment of the “third mission” is embedded in its own nature, source, and mission. Thus, the close links to the business world have meant that the university has always taken it into consideration in order to meet its needs.

Business are an integrated part of the methods and models of EPS-MU, as the teaching model is based on a work-study approach, the graduation project includes the involvement of companies, the lifelong learning programs that are developed for companies (in-company most of them) and the collaborative research model which is running now for more than 10 years. The model of research and transfer allows EPS-MU to achieve scientific levels of excellence, integrated with the mid- to long-term needs of our companies. We develop a collaborative model with companies, where mutual confidence and objectives multiply the efficiency of resources (Igartua et al., 2010). In this sense, the technological transfer and innovation continue to be a differential factor of EPS-MU, with more than 415 clients from business, and a R&T dimension of more than 12 million euros, where research contracts and transfer are close to 7 million euros.

As an evolutionary approach of this commitment towards the EPS-MU mission, innovation and entrepreneurship in collaboration with companies can also be formally defined and structured, and therefore incorporated into EPS-MU’s processes and activities. EPS-MU has the unflagging aspiration to be an innovative university, and is conscious of the fact that
society also needs innovative and enterprising individuals. Therefore, EPS-MU dedicates a large part of their efforts to ensure that students who are an active part of the institution are imbued with a robust sense of innovation and enterprise. Accordingly, different prominent instruments have been introduced, one of them being the entrepreneurial collaboration approach and its associated EAP.

3. OBJECTIVES
Whilst EPS-MU already had an established collaborative model with companies, this was further developed in 2011, when EPS-MU initiated its entrepreneurial collaborative approach and consecutive EAP. The objectives for fostering this initiative were to:

- foster entrepreneurship among EPS-MUs students.
- increase the number of potential business ideas.
- increase the number of business ideas transferred to the BIC.
- share industrial real problem with EPS-MUs students.
- provide innovative solutions to companies problems.

4. RESPONSIBILITY
The responsibilities for successfully implementing the entrepreneurial collaborative approach with companies are divided over a strategic pillar and an operational pillar, which is structured in three phases. The three phases refer to the three main activities defined in the EAP, which are defined in detail in the following table:

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Phase</th>
<th>Entity</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic</td>
<td>Strategic Plan</td>
<td>Faculty Management</td>
<td>Strategic Planning and decision making</td>
</tr>
<tr>
<td></td>
<td>Promoting Entrepreneurial Spirit</td>
<td>TEKin Degree Management Teams</td>
<td>- Manage Activities within EAP</td>
</tr>
<tr>
<td></td>
<td>Capturing New Business Projects</td>
<td>Mentors Lecturers</td>
<td>- Assure correct planning within course</td>
</tr>
<tr>
<td></td>
<td>Maturing New Business Projects</td>
<td>Evaluation Committee</td>
<td>- Deployment and execution of EAP</td>
</tr>
</tbody>
</table>

The strategic pillar is carried out by the Faculty Management, where the work-team deals with the strategic planning and decision making on the university's partnering program.

On the other hand, there are some operational agents who following EPS-MUs strategic directions foster the entrepreneurial collaboration between academia and industry providing, the planning and development of the annual EAP. TEKin is one of these key agents that coordinate external inputs and projects, from any organization, which enables to get advantage of synergies in order to foster entrepreneurship among EPS-MUs collective. This group is composed by lecturers and researchers; who following a bottom-up strategy are dealing with the entrepreneurial collaborative approach driven and supported by their
expertise or personal commitment. Additionally, there is another important group, called the Evaluation Committee, which is responsible for selecting and validating the ideas and projects which are suitable to be transferred from one stage to the following. This team consists of a mixed group with technical experts (in issues related with the projects) from EPS-MU, entrepreneurship trainers, mentors from the BIC and business people.

**IMPLEMENTATION & FUNDING**

5. **STRATEGY & ACTIVITIES UNDERTAKEN**
EPS-MU can be described as a Knowledge Transfer University which has promoted, with the collaboration of the local BIC Saiolan, the creation of new business initiatives and the spread of new innovative services, products and projects. Hence directly contributing to the growth and stability of existing regional organizations. EPS-MU has put a high emphasis on developing the entrepreneurial activities inside the universities in order to achieve these objectives. These activities can be classified following the “soft” and “hard” initiatives spectrum defined by Philpott et al. (2011), depending on their potential to contribute (directly or indirectly) to economic development, as well as the financial wellbeing of the university. The table below outlines EPS-MU’s entrepreneurial current situation from the entrepreneurial activities classification perspective.

<table>
<thead>
<tr>
<th>Entrepreneurial activities</th>
<th>EPS-MU 2011/2012</th>
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<tbody>
<tr>
<td><strong>&quot;Hard&quot;</strong></td>
<td></td>
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<tr>
<td>Creation of a Technology Park</td>
<td>GARAIA Innovation Centre</td>
</tr>
<tr>
<td>Spin-Off Firm Formation</td>
<td>5 Spin-Off generated</td>
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<tr>
<td>Patenting and Licensing</td>
<td>6 Patents or Licenses</td>
</tr>
<tr>
<td><strong>&quot;Soft&quot;</strong></td>
<td></td>
</tr>
<tr>
<td>Contract Research</td>
<td>150 Companies contracting R&amp;D</td>
</tr>
<tr>
<td>Industry Training Courses</td>
<td>40 Industry Training Courses</td>
</tr>
<tr>
<td>Consulting</td>
<td>152 Consulting works</td>
</tr>
<tr>
<td>Grantsmanship</td>
<td>More than the 50% of the R&amp;D budget, has been financed by Industry</td>
</tr>
<tr>
<td>Thesis</td>
<td>62 based on Industry grants (in progress)</td>
</tr>
<tr>
<td></td>
<td>56 others (in progress)</td>
</tr>
<tr>
<td></td>
<td>9 defended</td>
</tr>
<tr>
<td>Publishing Academic Results</td>
<td>24 Indexed publications</td>
</tr>
<tr>
<td>Producing Highly Qualified Graduates</td>
<td>533 Graduates</td>
</tr>
</tbody>
</table>

These figures, from the academic course 2011-2012, show that EPS-MU had a good starting point for the path towards an Entrepreneurial University. Furthermore, the results from the Entrepreneurial “soft” activities show that, in this case, a close University-Industry relationship and a Collaborative Research model are key factors for an Entrepreneurial
University. Encouraged by these figures, EPS-MU decided to take it to the next level and promote the “hard” entrepreneurial activities.

Dealing with this new approach towards an Entrepreneurial University, EPS-MU developed, for the first time, an EAP within the course 2010/2011; which currently is in its third edition. The aim of this plan is to establish suitable mechanisms for increasing the percentage of ideas developed as business projects.

The EAP is divided in three consecutive parts, which are the three milestones that any entrepreneur should face during the early phases of the entrepreneurial process. The objective of the first one is the promotion of the entrepreneurial culture and the idea generation. Then, during the second stage, students learn how to turn those business ideas into potential business projects. And finally, at the last stage, they develop their own Business Plan.

The first stage called “Promoting Entrepreneurial Spirit” is focused on the promotion of the entrepreneurial spirit which is developed throughout the entire academic course. Furthermore, for instilling the entrepreneurial culture amongst the students, punctual “entrepreneurial pills” are developed. It is worth mentioning that most of these initiatives are carried out by entrepreneurs and business people who have gone through the entrepreneurial process.

In the second stage, actions are more oriented towards identifying and developing possible business ideas. There are some mechanisms and actuations established for capturing ideas which could turn into entrepreneurial projects. Moreover, this part is also oriented at developing the first draft of the ideas’ Business Model, supported by several mentors. This assistance helps the entrepreneurs developing their value propositions, customers segment, cost structure, etc. and at the same time, turning their initial business ideas into a potential business project. Then, there is a filter where the Evaluation Committee decides which ideas are suitable to transfer to the third phase or not. This team is composed by technical experts from EPS-MU, mentors from the BIC and representatives from business.

The “Maturing New Business Projects” part starts with a potential entrepreneurial project and its aim is to develop its Business Plan. At this point, the Evaluation Committee evaluated these Business Plans and if they were suitable, the business idea would be transferred to the BIC-Saiolan, for continuing the analysis and establishing a business entity.
It is worth mentioning that each stage of the EAP has a specific target inside the whole entrepreneurial process. The activities oriented to the first two parts of the EAP are opened to everyone who is interested in entrepreneurship. The following part describes the previously introduced three stages and its activities in more details.

Stage 1: promoting entrepreneurial spirit
The first stage is focused on promoting entrepreneurial culture among EPS-MUs students and is led by two main activities. The first one is the Entrepreneur's Day, which has two main objectives. On the one hand, it is focused on the awareness and motivation of entrepreneurship among students; and on the other hand, it shows (through dynamics) some basic creativity and entrepreneurial tools. During this day, students participate in a creativity workshop where they learn several creativity techniques for idea generation. Then, there is a presentation where two entrepreneurs (usually representatives from business) share their experiences with students. Finally, towards the end of the day, the students are involved in a small workshops to develop their entrepreneurial skills.

The second mechanism is the lecture series, which are placed throughout the whole academic course. There are three lectures during class hours to discuss and present successful entrepreneurial cases, in order to motivate and encourage the students for undertaking this life style. Often, former EPS-MU students are presenting these real-life cases, explaining their experience with self-employment.

Stage 2: from ideas to potential business projects
The second stage, turning business ideas into potential business projects, is more focused on teamwork. Three out of the four activities within this stage have the objective of creating a business model from students' potential business ideas.

The first mechanism to be mentioned, and one of the most important, is the Problem Based Learning project (onwards PBL project) focus on entrepreneurship. During the last course of three specific engineering degrees (management, informatics and telecommunications), students (in small teams) develop a PBL project where, as the first milestone, they have to identify one potential business idea and develop its business model (using the “Business Model Canvas” (Osterwalder & Pigneur 2010)). At the initial phase of the project, there are several master classes for sharing helpful tips and tools and time is allocated for the students to freely work on further developing their project. Furthermore, some of these PBL projects are based on real industrial problem, since at the beginning of the project various companies share their problems in order to be solved by the students.

Another mechanism is the Creativity and Entrepreneurship Workshop, where students from different degrees spend a whole week simulating the first steps of the entrepreneurial process; starting from the idea generation and ending with the business model development. Furthermore, this activity has the support from an important Basque enterprise, which shares one of their current challenges, following which the students have to apply the tools and methodologies learned in order to solve the challenge.

At this point, the Evaluation Committee is established in order to evaluate all the potential Business Models developed in the previous two activities and decide which of them have the potential to be transferred to the next stage.
Lastly, once students have acquired basic knowledge around idea and business model generation, they participate in a Business Plan Competition called EKITEN. Any student from Mondragon University can join the competition; the only thing they have to do is send their Business Model(s) to the evaluation committee.

**Stage 3: from a business project to an established company**

This last stage of the EAP is focused on the Business Model development where students have two options for achieving this objective. On the one hand, students from the three concrete engineering studies can pursue the PBL project, and develop their own Business Plan; taking the previous Business Model as the starting point. On the other hand, there is another activity, called Pre-Incubation, which is open to all students who want to develop their own potential idea (previously validated by the Evaluation Committee) in more detail. All the entrepreneurs enrolled in this activity have been assigned to a tutor for guiding them through the entire entrepreneurial process. Furthermore, there is an equipped room available where they can work, hold meetings, make prototypes, etc.

Finally, the Evaluation committee evaluates all the developed Business Plans and decides if which of them are suitable to be transferred to the BIC. In addition, this committee also has the task to select the winner from the Business Plan Competition. Moreover, the winners from this competition have the opportunity to further develop their business idea in the BIC-Saiolan with a scholarship.

**6. MONITORING AND EVALUATION**

Defining an action plan is a key point of the entrepreneurship promotion; however how it is development is even more important. Due to this fact, three specific indicators have been defined in order to measure the executed actions: the turnout, the number of ideas and the number of projects. In the following paragraphs several figures will be introduced, related to the academic course of 2011/2012.

Regarding the first stage of the EAP, an average of 246 students took part in the Entrepreneur’s Day during which 44 business ideas were created. Moreover, a lecture series has been established, which was attended by around about 40 students. Additionally, 97
students took part in the Business Plan Competition; which participated in groups of 3 or 4 members that have developed 25 New Business Ideas.

Within the PBL methodology, through the academic course 2011/2012, 82 students were involved in these kind of PBL programs and they developed 16 Business Plan. Furthermore, one of these teams is currently in the pre-incubation phase.

During these PBL projects, there are different milestones; and the first one is the Idea Generation Phase. At this point, the students generate new possible business ideas using different creativity tools (brainstorming, six thinking hats, mind mapping... etc.). This year the students have generated 58 business ideas, which have been evaluated by a committee who decides which are the most suitable to be transferred to the next step (the Business Plan elaboration). From the 58 generated business ideas, 16 have been transformed into a Business Plan.

Analysing these results, in total the Evaluation Committee has valuated 86 Business Ideas, and 44 of them were suitable for moving to the Maturing stage. All these potential business ideas have been further developed by 95 students. At the end of this phase, another Evaluation Committee has valuated the 44 projects and only 9 of them had the potential to become a new business entity. However, the Evaluation Committee decided that the Projects are not developed far enough, thus the future entrepreneurs are still working on the business plans.

7. SUSTAINABILITY MEASURES
The mechanisms and activities that have been created need to be maintained in order to gain sustainable results in the future. First, in order to maintain and improve the figures shown in section 6, a midterm approach has been defined which is integrated in the University’s global strategic planning. Then, when the management plan is defined, a yearly EAP is defined, so that every activity is taken into account and no lack of resources or planning occurs.

Finally, at the operational level, sustainability is ensured due to the fact that most of the activities included in the EAP are embedded in the study plan of each engineering degree, making it easy to achieve and improve the results.

8. COSTS
The initiation of the EAP has required an important amount of effort and commitment. First to define and plan the EAP, and then to develop and start working on the different activities defined. It has to do with a mindset change, where an engineering student is being taught entrepreneurial skills rather than solely engineering skills. As with every change, and certainly when it comes to a change in mindset, it takes time to implement and see the results.

Even so, the university’s management board agreed to continue with the program and a leading team was constituted that is responsible of carrying out the EAP, planning the next one and ensuring the promotion of the entrepreneurial spirit through the university’s staff and students.
The most significant costs assignable to the present case are those referred to the time spent defining and implementing the EAP, including all the preparatory meetings and the communication activities.

9. FUNDING
The case was funded by two funding entities, the first one, the university itself and the second one the business development agency of the Basque Government, SPRI. In this case, the funding effort was divided into two equal parts, so that each of the entities contributed 50%.

At this initiating phase, the industry’s participation is integrated in the previously explained activities, so that no funding effort is asked from them; however, our commitment to increase the collaboration and the value added that companies identify in this collaboration will lead us to a long term collaboration agreement. In this sense, they will gain important benefits and the university will be able to ask for co-funding for these activities.

Nowadays, after two years of the case presented, the funding structure continues divided in two main parts, the self-founded part, where resources are allocated and directed to support the organization wide approach, and the public funding from the Gipuzkoa Provincial Council.

10. OUTCOMES
EPS-MUs research activity remains a balance between quality, originality and recognition from the international scientific community, the orientation towards companies and the recognition from our close industry. The alignment between EPS-MUs research activity and companies’ technological strategy is the cornerstone of the Collaborative Research & Transfer activity, which is a good example of the Knowledge Triangle: education, research and innovation.

Moreover, as part of the Collaborative R&T activity, these are undertaken from fundamental oriented research projects (where are included doctoral thesis) to industrial research and experimental development; which lead into innovative products, processes and services. This success proofs that it is not only possible to get on with research excellence and bringing together to companies, but it is convenient for both research agents and industry. In this context the collaboration with the following companies and groups are noteworthy: Lift, Automotive and Components divisions from Mondragon Corporation, Fagor Group, Ingeteam, CAF Group, Fagor Arrasate, BTI, ITP and Ormazabal Group, among others.
Regarding entrepreneurial projects, a total of 16 former students have been developing their new own business (a total of 11 projects) in the BIC Mondragon - Saiolan during the academic year 2011-2012 and 5 spin-offs have been launched. These are satisfying figures taking into account the high level of University Industry Collaboration (UIC onwards) that EPS-MU has, since it is shown that UIC is negatively related to spin-off creation (Prodan and Drnovsek, 2010). Furthermore, there have been some additional activities developed, such as business diversification, based on the high UIC.

11. IMPACTS
In addition to previously mentioned results and achievement, some unintended impacts of the shift in focus of the university have also been documented.

For example, as it is shown in section 6, there is a fairly high amount of potential business ideas at the third stage of the entrepreneurial process. Almost in all of the cases, the students who are undertaking these ideas are last year students and have to develop their final year project based on companies. Thereby, after realizing the good results achieved by our students within the EAP, various Basque enterprises have shown their interest on launching a final year project for developing more in depth business ideas.

12. INVOLVED STAKEHOLDERS AND BENEFICIARIES
EPS-MUs entrepreneurial collaborative approach is well linked with stakeholders of all kinds. In the following, each of these main stakeholders and their key benefits are briefly discussed.

Business partners
Thanks to various initiatives which we are developing within the EAP, the business partners are getting new and fresh inputs from EPS-MU students. Moreover, researches from the engineering school also take part in these activities; thus, currently, business partners get the opinion of experts’ as part of the collaboration model and existing agreements.

EPS-MU
The Engineering Faculty benefits from developing real Problem Based Learning projects, which creates the nexus between the “real world” and the “academic world”; creating better prepared students for the labour market.

Students
EPS-MUs primarily benefit from the entrepreneurial collaborative approach by receiving educational programs which are better aligned to industry needs. Moreover, thanks to EAP students have discovered a new ways of living, such as the self-employment or the incorporation in companies willing to develop innovative ideas and businesses.

Region
The EAP is completely aligned with regional strategies, since the entrepreneurial collaborative approach fosters the relationship between the “real world” and the “academic world”, and increases the number of potential entrepreneurs.

13. AWARDS / RECOGNITION
One of the most important achievements of the entrepreneurial collaboration approach and the EAP is students’ involvement on participating in New Business Ideas Competitions; such
as the “Imagine Cup” promoted by Microsoft. The last two years, students from EPS-MU have reached the final stage of this competition.

Furthermore, at the regional level, EPS-MU has been recognised as a member within the network “Euskadi Emprende”. This is a network for sharing knowledge and promoting entrepreneurial projects.

**LESSONS LEARNED**

**14. PRIMARY CHALLENGES**

About the main challenges of our approach, the property of the work developed by students in company strategic business ideas is perceived as a weakness that needs to be address in a model that fosters university business entrepreneurial collaboration; and examples of real situations can already be explained. Another element that needs to be address has to do with the financing of certain prototypes and models, and therefore how companies involved financially in collaboration. These two elements need to be defined early in the collaboration program in order to avoid misunderstandings and assure win-win lasting relationships.

**15. SUCCESS FACTORS**

The existence of a university business collaboration ecosystem that embraces many forms of collaboration with industry is a key success factor of EPS-MU’s EAP. EPS-MU develops many activities in collaboration with companies from the more operational level to the more strategic one, where each one of its members (lecturers, staff, researchers and students) understands and shares the commitment and responsibility of the institution for transforming society in its area of influence. The industry focus of EPS-MU starts in the definition of new degrees and profile of students based on the actual and future needs of companies, accompanying them in their process of recruiting talented students, that work and study while developed their final year projects (technology, operations, research or entrepreneurial orientated) and doctoral theses within mid-long term collaboration schemes; where staff, lecturers and researchers support all these activities. The active implementation of TEKin as a structure that coordinates external inputs and projects is also a key element, which enables to get advantage of synergies in order to foster entrepreneurship and deploy the EAP.

The involvement of most staff on three main activities (lecturing, research-transfer and continuous training for industry) also assures the permanent contact of university members with companies what makes them aware of the needs of companies and gives them ideas about possible initiatives that could be developed in collaboration. Entrepreneurial activities are actually, as well as innovation, one of the top priorities, where companies need fresh and technology based ideas along with people (students, doctorates, researchers, etc.) capable of developing them.
16. TRANSFERABILITY
The case of EPS-MU is a unique case, since it is a cooperative university which is part of the MONDRAGON Corporation, with a clear human vocation and a commitment to our environment, our society and our time. From this starting point, EPS-MU contains an established collaboration model which is the basis for the entrepreneurial collaboration stage. Thus, first of all, it seems necessary to establish a stable collaboration model and then, develop and implement an annual EAP and its corresponding activities. Moreover, independently to any collaboration approach, some of the activities from the EAP could be applicable for other universities. As José María Arizmendiarrreta (founder of MONDRAGON Corporation) said, “The sign of the vitality is not to last, is to renew and adapt”.

17. PUBLICATIONS / ARTICLES

AN ENTREPRENEURIAL COLLABORATIVE APPROACH


18. LINKS

- http://www.mondragon.edu
- http://www.mondragon.edu/es/eps/servicios/tekin-emprendizaje
- http://www.euskadiemprende.net

19. KEYWORDS

University Industry Collaboration, Academic Entrepreneurship Activity, Entrepreneurial Action Plan, Entrepreneurial University

20. PUBLIC CONTACT DETAILS

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CYPRUS UNIVERSITY OF TECHNOLOGY’S RESEARCH INSTITUTE

DEVELOPING A SELF-FUNDED RESEARCH INSTITUTE FOR BOOSTING AND PROMOTING SCIENTIFIC RESEARCH TOGETHER WITH THE BUSINESS WORLD

By Elpida Keravnou-Papailiou, Charalambos Chrysostomou & George Kokou
## General Information

<table>
<thead>
<tr>
<th>Title of the Case</th>
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<tbody>
<tr>
<td>Sales Pitch</td>
<td>Developing a self-funded Research Institute for boosting and promoting scientific research together with the business world</td>
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<tr>
<td>Authors</td>
<td>ElpidaKeravnou-Papailiou Charalambos Chrysostomou George Kokou</td>
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<tr>
<td>Nature of Interaction</td>
<td>✗ Collaboration in R&amp;D</td>
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<td>✗ Academic mobility</td>
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UIIN GOOD PRACTICE SERIES
Written by ElpidaKeravnou-Papailiou, Charalambos Chrysostomou & George Kokou
www.uiin.org
1. SUMMARY
In 2010 the Cyprus University of Technology (CUT) has set nine strategic goals until 2020. One of these is the linkage with the productive fabric of the country. Since then, various steps have been taken towards the achievement of this strategic goal focusing on fostering innovation and entrepreneurship through joint initiatives with industry and the business world. The case study provides an overview of these initiatives in the broader context of the University’s mission as a catalyst for change and growth in its region that engages actively in the educational and cultural life of its community and presents their outcome so far.

2. BACKGROUND
CUT is a new state university in Cyprus, but also the only technological university in the country, and as such the University aims to continuously strengthen its unique applied sciences profile. CUT admitted its first students in 2007. Currently it has 2500 students, offers programmes of study at all cycles (undergraduate, Masters, PhD), and has graduated about 700 students, including 9 doctoral students from five disciplines (Civil Engineering, Mechanical Engineering, Nursing, Environmental Science and Technology, Agricultural Science, Biotechnology and Food Science). At present, the University has 226 positions for teaching and research staff.

The University’s “Strategic Plan 2010-2020” (CUT, 2010) following extensive internal dialogue and exchanges with external stakeholders, reaffirms its vision as “a modern and innovative university with international recognition, capable of providing high quality education and research in cutting-edge areas with scientific, technological and economic impact, and assisting society in addressing important problems in these areas” and sets targets for realising this vision, firmly positioning the mission of the University under the quadruple:

(a) Education,
(b) Research,
(c) Linkage with the productive fabric of the country, and
(d) Engaging with society.

The strategic plan underlines the University’s development during the current decade, encompassing important trends and developments at European and international levels. Its aim is to turn CUT into a modern technological university that promotes excellence in teaching and research, that has a major impact in the socio-economic development of its region, and that actively engages in the educational and cultural life of its community.

3. OBJECTIVES
Committed to the University’s vision of becoming a driving force for change and growth in its region, the CUT leadership works towards establishing a research institute aiming at
integrating research with the productive fabric of Cyprus by utilising the achievements of the University’s Industry Liaison Office and the Liaison Committee with Society. More specifically the University aims to:

- develop a structured network between its academic and student community and the regional business sector and society in order to generate a partnering platform, enabling synergy creation and transfer of specialised know-how in terms of research, technology and innovation, and
- promote a culture change and an entrepreneurial mind-set within its academic community.

4. RESPONSIBILITY

The CUT Industry Liaison Office acts as the University’s Lighthouse; it is responsible for the effective promotion of the University’s capabilities/expertise and laboratory offered services to the business and local community and for setting up a registry of the industry’s relevant needs/interests and inquiries for joint projects with a view to assist towards synergy creation. Similarly the Liaison Committee with Society is tasked to liaise with social stakeholders to facilitate the networking between research teams of the University and local SMEs and bigger industries, identifying research-related problems of interest to both parties.

The above two bodies are paving the way for the establishment of a research institute within the University, which will then undertake the role of reinforcing the innovation capacity and promoting the interconnection of the academic activities of research and graduate education with the productive fabric of the country. The ultimate goal is to create more flexible structures for boosting and promoting scientific research in unison with industry (see Fig. 1).

Fig. 1 – Linking CUT with Industry and Society
IMPLEMENTATION & FUNDING

5. STRATEGY & ACTIVITIES UNDERTAKEN
The University’s “Strategic Plan 2010-2020” (CUT, 2010) concentrates on the quadruple helix described before, which serves the purpose of CUT becoming a driving force for change and growth in its region. As a result, various activities and initiatives have been undertaken towards fostering innovation and entrepreneurship through joint initiatives with the business world and other stakeholders (municipalities, public and private authorities).

The operation of an Industry Liaison Office, utilising EU structural funds, led to the development of strong personal contact relationships with industry representatives in order to achieve solid links between the University and the productive fabric of the country. So far the Industry Liaison Office has created a registry of in-house scientific/technical expertise, it aids academic departments in placing their students in industry for internships and it participates in activities for establishing partnerships.

In conjunction with the operation of the Industry Liaison Office, the University Council has appointed a Liaison Committee with Society, which has already accomplished to liaise with a number of social stakeholders (local business, industry, public authorities, etc.), attracting student scholarships, facilitating the networking between research teams of the University and local SMEs and bigger industries and identifying research-related problems of interest to both parties, that could be tackled through innovative knowledge and technology transfer. Thus, instead of the University waiting for industry and business to approach it, it itself engages in a proactive liaising with them.

Furthermore, most academic departments of the University have established Forums with industry both for student placements in industry as well as for enhancing, through their curricula, the skills and competences that industry needs. The curricula of the first cycle programmes are largely interdisciplinary, emphasising the application of theoretical knowledge to practical problem solving, through case studies, learning by doing, practical/hands-on experience in industry and other forms of experience-led teaching and learning.

Legislation is underway for establishing a Research Institute within the University focusing on the areas of energy (prospects in this area have been substantially enhanced owing to the recent discovery of hydrocarbons in the Exclusive Economic Zone of the island), environmental and public health, biotechnology, green technologies, information communication technology, etc. This novel idea is based on the concept of the “knowledge triangle” that underlines the European Institute of Innovation and Technology Knowledge Innovation Communities (EIT, 2012; European Commission, 2011) and the associated notion of “open innovation” (Chesbrough et al, 2006; Perkmann and Walsh, 2007). The key features of the Research Institute, the establishment of which will substantially increase the organisational autonomy of the University are:
(a) a governance structure that involves industry as a key partner,
(b) joint appointments with industry,
(c) provision of graduate level programmes, addressing entrepreneurship and experience-led teaching,
(d) endowed chairs from industry,
(e) industry collaboration and innovative knowledge transfer acquire prominence in the promotion of the academic staff of the Research Institute, and
(f) the provision of significant incentives to researchers (start-ups, spin-offs, etc.).

The pursued CUT Research Institute, acting as a self-funded entity, is expected to help to strengthen the autonomy of the University regarding organisational structure, funding and staff (Estermann and Nokkala, 2009), and in particular it will promote the interconnection of the academic activities of research and graduate education with industry. The new scheme would provide incentives to researchers to be continuously active in research and able to attract external funding for research programmes, while educating young researchers through specialised postgraduate programmes at Master's and doctoral level, thus acting as a Graduate School as well. It is noted that the academic staff of the Research Institute would receive remuneration from the state budget just for their teaching, but would be able to top up their salaries through research-related and technology transfer activities. Moreover, they would be able to hold joint research appointments with industry. In addition, the promotion criteria for the academic staff of the Research Institute would emphasise knowledge transfer and related societal impact. Overall, the Research Institute would be hosting a number of research groups (that could vary dynamically over time) and would be affiliated with other Research Units within the University. Furthermore, its collaboration with industry and business through institutionalised links would constitute an integral aspect of its operation. In addition, any researcher within the University whose research results/ideas might have an industrial potential and who would like to explore such opportunities could take advantage of the facilities and know-how of the Research Institute.

More specifically, the Research Institute is expected to promote the following:

- Interdisciplinary research through the creation and housing under one umbrella of a critical mass of researchers, most of whom would be full-time researchers, and belonging to various scientific disciplines. These scientific areas would constitute priority areas for the University representing technological frontier areas with significant growth potential, so that it would be feasible to attract substantial private investment for this research.

- The linkage between research and the industrial and business world, as well as with organisations of common benefit and NGOs, with the aim of transferring knowledge and technology to create innovative products and services. This would be achieved by explicit and interactive, institutionalised links between the Research Institute and industrial/business units. The mechanisms of innovation are largely common to the various disciplines and therefore the co-location and collaboration of many research groups/units within the Research Institute would lead to more coordinated and rational use of these mechanisms.

- The provision of innovative, specialised international graduate programmes in research areas covered by the Institute, thereby directly linking scientific research with advanced postgraduate education, as the new knowledge acquired through
research would be transmitted directly to the graduate students. The postgraduate programmes in question, beyond the scientific knowledge in their scope, will have reinforced components of "experience-led teaching" (The Royal Academy of Engineering, 2010) through the explicit and interactive interface with industrial and business units mentioned above, and even some of these programmes would be joint university-industry efforts, for example joint doctoral programmes, where students would be funded by industry.

- The training of the graduate students and researchers of the Institute in developing the necessary transferable skills with a focus on entrepreneurship.
- The development of shared infrastructure for research in collaboration with industry and the creation of new jobs for young researchers and scientists.

The Institute would be staffed by academic and research staff, who would be allowed to have joint appointments/affiliations with industry, in connection to research, technology transfer or the exploitation of ideas/products. In particular, academic staff would be remunerated from the University's state grant only for their teaching, while for their research work they would be remunerated from external funds that they would be able to attract on a purely competitive basis. The Institute would be hosting postdoctoral researchers who would be funded from external sources, giving them access to its research infrastructure. Postdoctoral researchers could also be engaged as contract staff on programmes funded by own revenues of the Institute. The Institute could also host academic and/or research staff from other universities, research centres or industrial units with which it would have collaboration agreements, either through joint graduate programmes or joint research programmes or other joint activities.

At any time, the priority areas of the Institute would be decided by the Academic Council, based on recommendations of the Scientific Advisory Committee and endorsed by the Industrial Steering Committee. The rolling developmental plan of the Institute would be geared by its strategic priorities, and would include the development of new, or the further enhancing of existing, graduate programmes or research groups.

Based on the above, the establishment and operation of the specified CUT Research Institute is expected to be instrumental in achieving the broader objectives of the University for integrating research with the productive fabric of the country. Additionally, the Research Institute could form the core, or could act as the catalyst, for a future Science and Technology Park of the University or wider.

Last but not least, the Faculty of Management and Economics plans to start an MBA programme in September 2013, as a joint programme between the two existing academic departments of the Faculty, namely the Department of Commerce, Finance and Shipping, and the Department of Hotel Management and Tourism. The programme aims to establish close links with industry and business and the acquisition/enhancement of entrepreneurship and business planning skills constitute a major feature of the programme. Structural reforms within the Faculty of Management and Economics are also under discussion, in conjunction with the establishment of a third academic department in line with the objectives of the "Strategic Plan 2010-2020". These structural reforms will aim to further boost the development of an entrepreneurial culture and a risk taking mind-set, in the overall context of integrating research, business and innovation.
6. **MONITORING AND EVALUATION**

The following Key Performance Indicators (KPIs) have been put in place:

- Number of agreements and protocols accomplished with profit and non-profit organisations and associations
- Number of joint initiatives developed
- Number of joint projects and partnerships with industry achieved
- Number of student placements
- Number of jobs created

Once the Research Institute is established and set into action additional KPIs will be defined and activated for measuring its performance and impact.

7. **SUSTAINABILITY MEASURES**

The establishment of the proposed Research Institute, as the natural embodiment and extension of the current successful operation of the Industry Liaison Office and the Liaison Committee with Society, is strategically embedded since research, innovation, and linkage with the productive fabric of the country are major strategic goals of the University. The University leadership is keen to establish CUT as a premier innovation and technology-transfer university. The notion of the knowledge triangle, i.e. bringing together higher education, research and technology and industry/business with the purpose of boosting innovation through entrepreneurship, which is the unique feature of the European Institute of Innovation and Technology, has already been put into test with promising results, demonstrating that it is a sustainable notion with potential for sustainable growth. It is this same notion that underlines the pursued Research Institute.

The commitment of the University’s leadership for the actions presented here is also grounded on the firm belief that these can generate revenue for the University at a time of great financial hardship for Cyprus. The present austerity measures have led to substantial reductions, of the order of over 40%, to the University’s state grant. Moreover, the key criterion for the selection of the scientific areas of the Research Institute would be growth potential and socio-economic impact.

Needless to say the proposed actions entail major changes, both internal and external at various levels, and these changes must be properly managed to ensure sustainability. Once the government is convinced of the viability of what is being proposed and approves the entailed legislative changes, the sustainability of the whole venture will depend on how successful the University would be in implementing the internal changes and promoting the development of a new entrepreneurially-gearied mind-set. This can certainly be facilitated through new promotion criteria for staff, and other rewards for staff aligned with the Research Institute objectives. In addition, the commitment of the academic staff of the Research Institute would need to be safeguarded; in particular existing members of staff would be able to request transfer from their departments to the Research Institute (through transitional provisions) but once transferred, they won’t be allowed to return to their old departments.
8. COSTS
The Research Institute would be self-funded with respect to its research, technology transfer and innovation activities, while the University would cover from its state grant, the cost of its teaching activities in terms of the FTE of its academic staff. It is noted that postgraduate programmes have tuition fees and thus would generate revenue for the Research Institute while a member of its academic staff could count for at most 0.5 FTE regarding his/her teaching. In addition the University would cover fully the position of the Director of the Research Institute as well as the Institute’s basic running and administration costs. Regarding its initial housing and start-up funding for its first academic staff, the relevant cost would be provided by the University as seed money. The first research group to be incorporated in the Research Institute is the Cyprus International Institute in Environmental and Public Health (CII) that has been functioning under CUT, in association with the Harvard School of Public Health, since 2009. CII’s existing premises would be used for the initial housing of the Research Institute, and CII’s teaching and research activities would also be transferred to the Research Institute. For the long term housing of the Research Institute the plan is to construct new premises through the employment of a private-public partnership with co-funding from industry.

9. FUNDING
The CUT Industry Liaison Office, formed in 2011, is a 4-year European Social Fund project entitled “Development and Operation of Enterprise Liaison Offices in Universities Operating in the Republic of Cyprus”, and has a key role within the University’s strategic plan for promoting synergies between industry and academia.

Regarding the financial support of the Research Institute, this would primarily come from external sources, so that the Institute could be considered a self-funded entity of the University. The sources of external funding of the Institute are expected to include the following:

- Research grants from external sources (national agencies, EU, private sources)
- Graduate tuition
- Consulting
- Endowed Chairs
- Revenue from the exploitation of ideas/products
- Fees for use of the research infrastructure of the Institute by external users

The revenue of the Research Institute shall be utilised for the further development and promotion of research, including the development of major public research infrastructure (mainly in collaboration with industry) to be made available to the entire University community and to external users.
10. OUTCOMES

The University has already signed numerous protocols of collaboration with a number of organisations in its immediate and broader region. The collaborative activities listed in these protocols include research, educational and cultural activities, and have already been inaugurated through series of public talks on scientific and other matters of broader interest, joint projects, and other joint initiatives, such as Europe-Direct that started its operation this year.

Furthermore, since its conception in February 2011, the Industry Liaison Office has generated the following notable results:

- Recorded the profiles of the academic staff and of the laboratories of the University and has built a comprehensive database listing the University’s competencies, expertise and research results.
- Recorded a number of job positions available in the industry for students of the University and completed a number of student placements.
- Formulated matching clusters and knowledge communities within a number of sectors by combining the University’s fields of expertise and the local industry’s prospects, know-how and needs/inquiries with the aim to reinforce research partnerships in the areas of innovation and entrepreneurship.
- Initiated and coordinated a number of meetings and information activities with business and non-profit organisations in order to establish closer links and collaborations with the University.

As a result, a number of mutually beneficial links and synergies through research collaborations and partnering opportunities have been developed between the University and a significant number of profit and non-profit organisations, including several agreements for consultancy services with a number of businesses, resulting to knowledge transfer and sharing, as well as innovation supply.

11. IMPACTS

It is still too early to have a clear picture of long-term benefits and/or disadvantages of what is already happening in the sphere of CUT’s activities presented here and more importantly of the planned activities. However, the current signals are overall positive and the given overall impact is expected to show an increasing trend, especially when more tangible incentives are given to the University staff for getting more actively involved in innovation and entrepreneurship activities:

- Development of an entrepreneurial culture
- Increased opportunities for innovation generation through strong partnerships with industry
CYPRUS UNIVERSITY OF TECHNOLOGY’S RESEARCH INSTITUTE

Student placement, practical/hands-on experience and job creation
Synergy creation through outsourcing core and non-core activities by business organisations to the University
Knowledge and expertise transfer

12. INVOLVED STAKEHOLDERS AND BENEFICIARIES

As the University concentrates on being an integral and active component of its local community and its surrounding business region, several stakeholders have been benefited more or less from the undertaken activities.

A. Local Community

CUT is an urban university, growing within and around the historical centre of the old city of Limassol, making this region the focal point for its activities. The University has already developed various initiatives for strongly engaging in the educational and cultural life of its community. By renovating historical buildings and using them for housing some of its key functions (library, main lecture hall, Senate house) the University is contributing in a major way towards maintaining the cultural heritage of the local community.

B. Profit, Non-profit and State organisations

Various other joint ventures with industry and other stakeholders (cooperatives, local business) aimed to be subsidised by structural and/or private funds, and with the objective of bringing back to use old buildings and other premises, both for housing functions of the University, as well as for generating jobs and revenue, are underway. Such an on-going project involves the newly established Faculty of Arts and Design and the pursued refurbishment of carob warehouses where various functions could be housed (carob museum utilising new technologies, design laboratories, gallery, etc.). The particular carob warehouses were built in 1947, they are situated on the seafront, and they form a very interesting complex, architecturally, culturally and educationally. Most importantly this complex has a huge potential with respect to regional development and the exploitation of innovative, entrepreneurial ideas. The complex could be the centrefold of the activities of an invigorating Faculty of Art and Design (the only such Faculty in Cyprus) and its two academic departments, in Multimedia and Graphic Art, and in Fine Arts, utilising new technologies in old settings, and developing the surrounding region to provide the necessary modern facilities for student life and extra-curricular activities. This could be a very exciting project bringing together many stakeholders, and providing job creation opportunities.

C. Students

Increased placement (internship) opportunities related to students’ specialisation help CUT students to acquire hands-on experience and become employable individuals.

D. Academics

Once the Research Institute is in place all academics and researchers of the University can benefit from its services.
13. AWARDS / RECOGNITION
No specific awards have been received so far. However recognition is coming in many different ways, such as in terms of student placements/scholarships (e.g. for joint doctoral programmes with industry), joint programmes, consulting services, and in general in terms of the enthusiasm with which local stakeholders are seeking to assist, and collaborate in joint ventures with, the University regarding the discussed activities and broader. Various proposals keep coming, for example a proposal from a local community (Moniatis Community) whose neighbouring forest area was some years ago destroyed by fire that wishes to join forces with CUT in developing a model Environmental Centre and nature trails, as well as another proposal from a local region (Achellia) seeking the assistance of the University in jointly expanding its farm facilities to a model farm supporting frontier research in this area.

Such proposals are actively being considered given that CUT is the only university in Cyprus that has a Geotechnical Sciences and Environmental Management School (operating a department in Agriculture, Biotechnology and Food Science, and a department in Environmental Science and Technology and planning a third department in Natural and Energy Resources). In particular, energy and the environment would be prime research areas for the Research Institute and overall CUT wishes to exploit in full its unique features and at the same time to gain societal recognition.

14. PRIMARY CHALLENGES
The different research cultures and approaches to innovation that exist between the academic world and the business world appear to be important challenges towards effective collaborations between industry and academia. On one hand, academics are mostly devoted to basic research and publications. On the other hand, the industrial world concentrates on short-term results through applied research with an effort to generate commercial products faster than competition accompanied with a high return on investment.

Another major challenge, is the fact that a notable part of the business world seems to be reluctant towards information sharing with third parties (i.e. academics), especially in terms of new product developments or when a project examines key internal organisational aspects.

An initial and expected challenge which has been successfully overcome, with the effective internal and external promotion by the CUT Industry Liaison Office, was the lack of awareness of both the University and the business world about the respective complementary capabilities and interests of each other.
15. SUCCESS FACTORS
The continuous negative prospects and state of the local and EU economy is perceived by a number of business organisations as a major barrier in further investing in research and development. Nevertheless, the CUT leadership commitment to pursue synergies with the industry by rigorously promoting the role and importance of the Industry Liaison Office internally (to the academic community of the University) and externally (to the business world and society) seems to pay off.

First, the continuous development of alliances and collaboration with various key private and state organisations, such as the local Chamber of Commerce, the Cyprus Shipping Chamber and a number of small and large companies, whose main activities are directly related to the University’s specialisations, assisted to a notable extent the external marketing efforts to promote the University’s capabilities and academic expertise to the business world, generating at the same time a better image for CUT and enabling more opportunities for the development of new products and new markets.

Furthermore, the CUT leadership effort to initiate rewarding internal policies which stimulate and encourage applied research among the research staff is perceived as the appropriate tool for generating a strong positive culture closely related to entrepreneurship.

16. TRANSFERABILITY
The discussed case offers significant insights in strategy formulation and implementation regarding the efforts of connecting academia with industry and society at large. Such initiative could become a paradigm not only for other universities which operate Industry Liaison Offices and/or Research Centres/Technology Transfer Offices but also for public authorities which are currently isolated within highly bureaucratic and inefficient structures which tend to minimise scope for growth in research and innovation.

FURTHER INFORMATION

17. PUBLICATIONS / ARTICLES


18. LINKS

- http://www.cut.ac.cy/university/research/
- http://www.cut.ac.cy/university/vision/
- http://www.liaisonoffices.ac.cy

19. KEYWORDS

Innovation, university-industry initiatives, entrepreneurship, Research Institute, Cyprus University of Technology

20. PUBLIC CONTACT DETAILS

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AIMDAY®

HOW TO CREATE EFFECTIVE, CONCRETE, AND PRODUCTIVE ACADEMIA-INDUSTRY MEETINGS

By Lars-Eric Larsson
GENERAL INFORMATION

TITLE OF THE CASE

AlMday®

SALES PITCH

How to create effective, concrete, and productive academia-industry meetings

ORGANISATION

Uppsala University Innovation

COUNTRY

Sweden

AUTHOR

Lars-Eric Larsson

NATURE OF INTERACTION

✔ Collaboration in R&D
✔ Academic mobility
☐ Student mobility
✔ Commercialisation of R&D results in science
☐ Lifelong learning
☐ Curriculum development and delivery
☐ Entrepreneurship
☐ Governance
☐ Other:

SUPPORTING MECHANISM

✔ Strategic instrument
☐ Structural instrument or approach
✔ Operational activity
☐ Framework condition
1. **SUMMARY**

An AIMday® process is initiated in the academy by the identification of a topic/theme under which companies are invited to submit their questions/problems. The selected topic should coincide with the University's areas of strength in order to secure a high quality, productive meeting later on in the process. Once the industrial questions have been received we match each individual question with a team of researchers, preferably from different disciplines so that the question can be addressed from different angels. AIMday® create value not only for the companies, typically around 95% of participating companies manifest that, but also around 90% of the researchers claim that they by participating got new knowledge contributing to their future research.

2. **BACKGROUND**

Ångström Materials Academy (ÅMA) is an academic-industrial partnership in materials science established by Uppsala University (UU) Innovation. The ÅMA partnership model is built on “true collaboration” generating mutual benefits and contributions. In order to maximize the value for both industry and academic researchers we needed a tool to effectively and precisely match industrial needs with academic front edge competence. This need triggered the development of AIMday®.

3. **OBJECTIVES**

Academia-industry joint programs/projects/activities in order to stimulate collaborations and mobility.

4. **RESPONSIBILITY**

Uppsala University Innovation

5. **STRATEGY & ACTIVITIES UNDERTAKEN**

The objective is not to provide answers during the hour that a discussion group meeting lasts, however. As much as a solution or help to find a solution is a great outcome of the discussions, the new constellations of people and competences that are brought together help identify various ways to further elaborate on the issue, and open new possibilities for rewarding collaborations. Since 2011 the use of funding of pre-studies as a way to facilitate the start of collaborative projects was tested with great success.
6. **MONITORING AND EVALUATION**
A company, Uppsala University Innovation Tools AB, has been established for the purpose of the monitoring and development of AIMday on commission by Uppsala University.

7. **SUSTAINABILITY MEASURES**
The use of the AIMday concept has been extended to other disciplinary areas, like life science and the humanities and social sciences. Here the concept has proven itself just as well as in materials science.

The preliminary work done by the organizers is key to the success of an AIMday event. The ability to put together discussion groups with relevant and knowledgeable researchers is critical. The university representatives must cover various disciplines and include senior researchers and the questions submitted must be ‘translated’ into issues that academic scientists can readily relate to.

The concept has also been “exported” to several other Swedish Universities.

8. **COSTS**
Sources of costs are staff, rent of venue for one day (the meeting day), and lunch during the meeting day. The whole AIMday process takes 4-6 months with and consumes in average 1 FTE during that period. During the first couple of months less, during the last 1-2 months a bit more.

9. **FUNDING**
Self-funded 40%, governmental 40%, public-private partnership 20%

10. **OUTCOMES**
- Collaborative research projects
- Contract research
- Joint funding applications
- Diploma works
- Student projects in industry
- Professional development for industry employees
11. IMPACTS
AIMday® create value not only for the companies, typically around 95% of participating companies manifest that, but also around 90% of the researchers claim that they by participating got new knowledge contributing to their future research. For success stories see www.aimday.se

12. INVOLVED STAKEHOLDERS AND BENEFICIARIES

If you are a representative from company, public or other organization

- Your questions define the meeting agenda
- Meet academic scientists who can contribute in the process of solving your issues.
- Learn about scientific methods and infrastructure available at the university.
- Gain access to national and international networks of highly qualified scientists
- Discover new opportunities for product- and service development through collaborations and commissioned research.
- Meet doctoral candidates who may be your future employees

If you are a scientist or doctoral candidate

- Meet leading companies and learn about their actual need for new knowledge and competence in your own research area.
- Discover how your unique and specific knowledge can be put into use to identify possible solutions to, or even solve, current problems
- Make contacts that might lead to future projects or employment
- Meet other scientists across departmental borders, universities and institutes to discuss issues of common interest
- Get inspiration and ideas that increase the quality of your own research
- Discuss collaborations in various forms

13. AWARDS / RECOGNITION

The AIMday concept has earned the attention of VINNOVA and the Swedish Steel Producers’ Association Jernkontoret, among others. It has also been recognized among other Swedish universities of which some have been involved in organizing AIMday events.
14. PRIMARY CHALLENGES
To describe the theme of an AIMday so that companies understand what type of questions/challenges they can submit and that the theme/challenges attract researchers to come and discuss.

15. SUCCESS FACTORS

- It is concrete
- It is effective
- It generates direct results

16. TRANSFERABILITY
It is a general method to initiate industrial collaborations for all academic and research institutions.

17. PUBLICATIONS / ARTICLES

- Baraldi et al, 2013, Crafting University-Industry Interactions: A typology and empirical illustrations from Uppsala University, Sweden, presented at the 2013 UIIN Conference.

18. LINKS

- www.aimday.se
- www.uuinnovation.uu.se
19. KEYWORDS

University-industry interaction, cooperation, collaboration, relationship, university-academia meeting

20. PUBLIC CONTACT DETAILS

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