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**STIMULATING ENTREPRENEURIAL MINDSETS AND BEHAVIOURS
IN EAST GERMAN HIGHER EDUCATION:
STATE OF PLAY AND INSPIRING PRACTICES**

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IN EAST GERMAN HIGHER EDUCATION:**
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PROMOTING ENTREPRENEURSHIP IN UNIVERSITIES

Universities have traditionally had two missions – research and education. However, they are increasingly seen as having an important role in local economic development – the so-called “third mission”. Entrepreneurship is a significant part of this new role for universities and it is important that they promote and support entrepreneurship through entrepreneurship education, specialised business start-up support and the development of strong linkages between university research facilities and the business community. Involving students in these activities will facilitate the acquisition and development of entrepreneurship skills that will help them be successful, regardless of whether they start businesses or pursue a career as an employee.

This study is part of a series of reviews on Skills and Competences for Entrepreneurship carried out by the Local Economic and Employment Development (LEED) Programme of the Organisation for Economic Co-operation and Development (OECD). This handbook provides some of the key results from this work and highlights many of the on-going good practices in university support for entrepreneurship seen in eastern Germany. Several international good practices are also included to help inspire universities and policy-makers in Germany and other OECD countries.

I would like to thank the Federal Ministry of the Interior for supporting this important project and I am confident that this work will be useful both for policy makers and practitioners in Germany and for their counterparts in other countries.



Sergio Arzeni
Director, Centre for Entrepreneurship, SMEs and Local Development (CFE)
Organisation for Economic Co-operation and Development (OECD)

SUPPORTING ENTREPRENEURSHIP IN EASTERN GERMANY

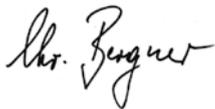
In the face of the financial and economic crisis of the last few years, business in eastern Germany has proved its robustness. Unemployment has continued to fall and key economic figures show that we are on the right track. Even if there is still a certain amount of catching-up to do in comparison with the west of the country, transformation of the New States into an innovative location with a bright future continues apace.

The latest figures from the Establishment Panel at the Institute for Employment Research (IAB) document progress made in, for example, product innovation: the figures show that 34 % of all businesses in eastern Germany are "product innovative". The Federal Government makes use of a sophisticated system of development instruments to support research and innovation in the New States.

Among those benefitting from this are the new enterprises who have contributed to such a positive development. We are seeing changes here that are similar to ones seen in the economy as a whole. The gap between east and west – in terms of attitudes towards entrepreneurship and entrepreneurial skills – is closing. In addition, regional differences on the state level are shrinking in the east, unlike in the west.

Entrepreneurial activity is not influenced by economic factors alone. Good infrastructure and creative people are just as necessary, as is the good idea or the new product which can be developed. This is why I am very happy that we are able to present such good examples of these at universities in eastern Germany in this booklet. With its study, the Organisation for Economic Co-operation and Development (OECD) gave us a good reason to reflect on the entrepreneurial activity that goes on at universities in the New States. The OECD is also the reason that this collection includes international examples. After all, exchange both at home and abroad is a guarantee that we will be able to talk of successful development in the future.

My thanks go to the OECD for its support, and I hope you find this compendium makes interesting reading.



Parliamentary State Secretary Dr. Christoph Bergner
Federal Government Commissioner for the New States at the Federal Ministry of the Interior

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This handbook was prepared as part of series of reviews on Skills and Competences for Entrepreneurship carried out by the OECD LEED Programme.

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IMPORTANCE AND NATURE OF UNIVERSITY SUPPORT FOR ENTREPRENEURSHIP

Many different inputs are required for successful entrepreneurship and one of the most important is entrepreneurship skills. The right skills are needed to identify opportunities and to turn entrepreneurial projects into successful business ventures. Successful entrepreneurs often follow a lifelong learning journey that starts in formal education and continues with learning-by-doing processes that occur inside and outside the firm.

Universities have an important role in this lifelong learning journey as they provide unique environments for students to learn about entrepreneurship and to stimulate and support entrepreneurial activities within a local economy. University entrepreneurship support has traditionally emphasised entrepreneurship education, which introduces entrepreneurship as a potential career option and generates positive attitudes towards it. It is equally important that entrepreneurship education assists students in the development of technical and business skill-sets needed to have a successful entrepreneurial career. This is valuable regardless of whether students start businesses or pursue a career as a paid employee.

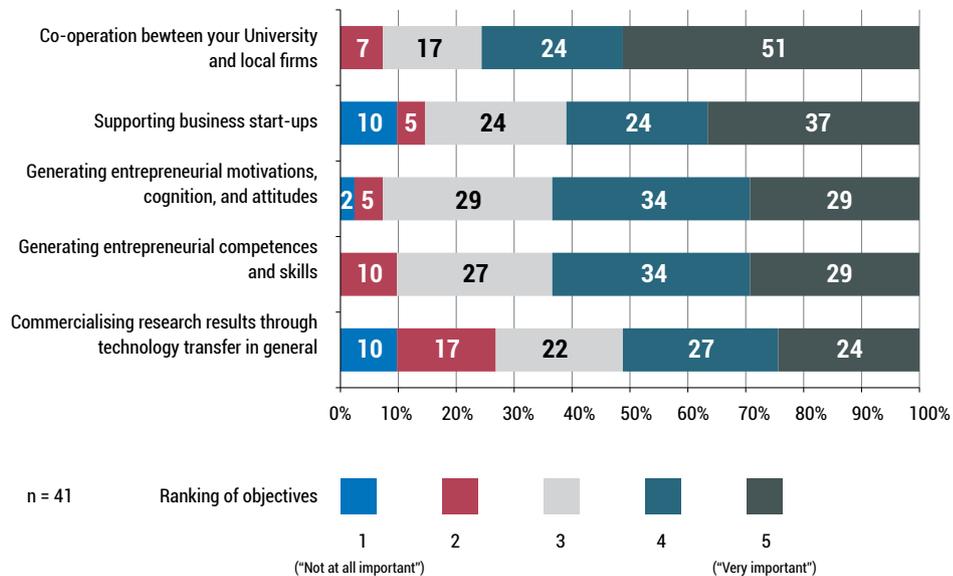
It is also becoming clear that universities have an important role in supporting the creation of new businesses, both by researchers and by students. This support often includes facilitating access to financing, providing premises, fostering the development of networks, and providing access to coaches, mentors and research results. The success of these offerings depends on the close co-operation and integration of the university support with the external entrepreneurship support system in the local environment.

CURRENT ENTREPRENEURSHIP PRACTICES IN UNIVERSITIES

University rectors in eastern Germany were invited to participate in an online survey in 2012 on their university's entrepreneurship support and responses for 41 universities were received. The survey included questions on entrepreneurship education offerings, specialized business start-up support services, strategies, resources and plans regarding entrepreneurship support. The following is a summary of the key results from the survey.

UNIVERSITIES VIEW STRATEGIC OBJECTIVES RELATED TO ENTREPRENEURSHIP AS IMPORTANT ...

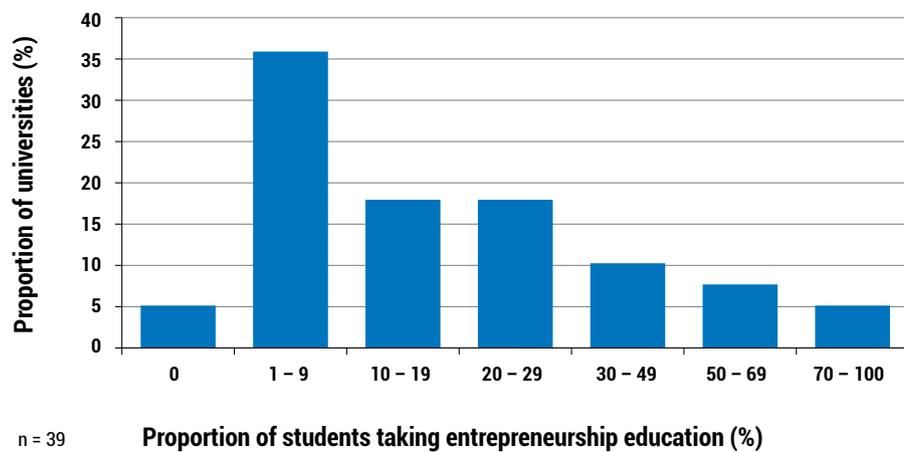
Figure 1. Ranking of universities' strategic objectives



Source: OECD, HEI Leaders Survey in eastern Germany

... HOWEVER MORE STUDENTS COULD PARTICIPATE IN ENTREPRENEURSHIP EDUCATION.

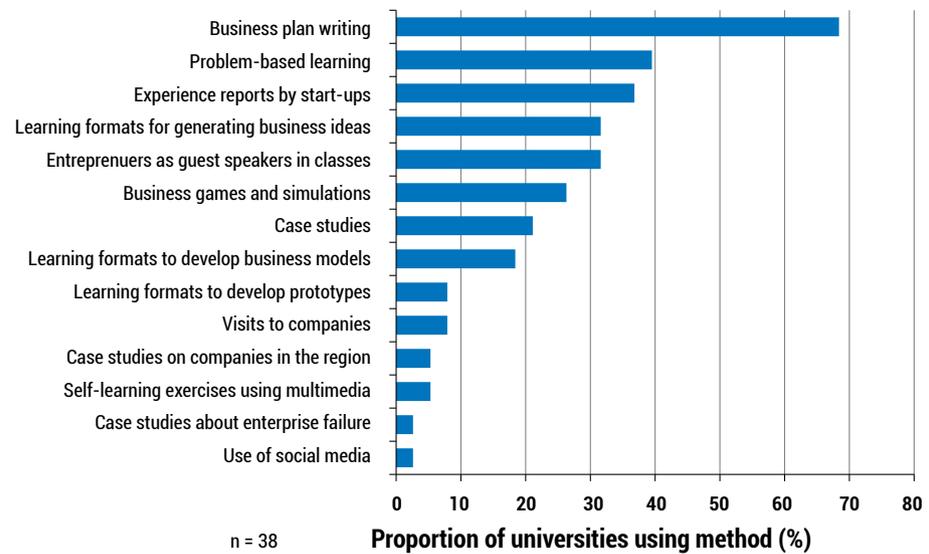
Figure 2. Proportion of students taking entrepreneurship education activities



Source: OECD, HEI Leaders Survey in eastern Germany.

DESPITE A WIDE RANGE OF TEACHING METHODS USED, THE FOCUS REMAINS ON BUSINESS PLAN DEVELOPMENT ...

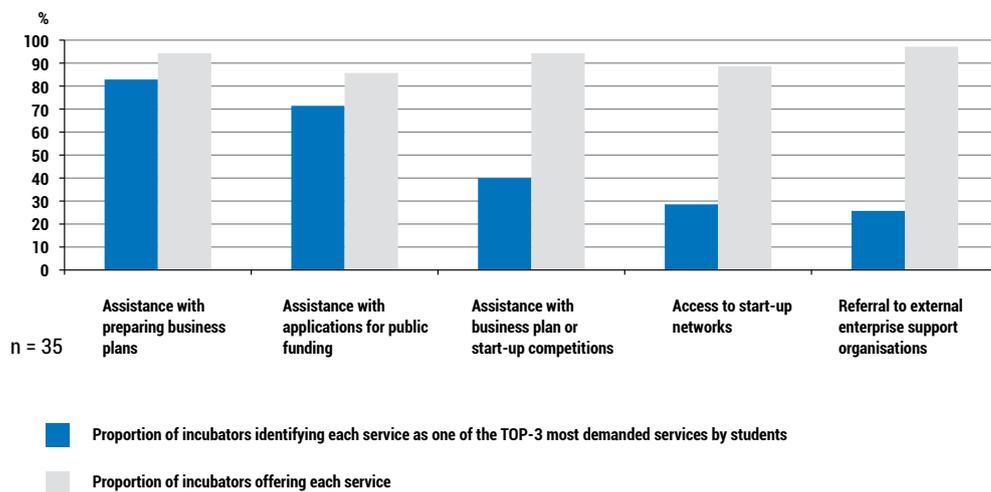
Figure 3. The most common teaching methods used in entrepreneurship education



Source: OECD, HEI Leaders Survey in eastern Germany.

... BUT BUSINESS INCUBATORS PROVIDE THE SPECIALISED START-UP SUPPORT SERVICES DEMANDED BY STUDENTS.

Figure 4. Business incubator services most in-demand by students



Source: OECD, HEI Leaders Survey in eastern Germany.

KEY CONCLUSIONS FROM SURVEY

Among strategic objectives related to entrepreneurship, universities identified co-operation with local firms as the most important. Strong linkages between universities and local firms provide students with better access to “real world” learning opportunities, both on- and off-campus. These linkages are also important for graduate entrepreneurs because they facilitate network building, which helps identify potential business partners, suppliers and customers.

All but one of the universities surveyed offer entrepreneurship education; however few universities reach a large proportion of the student population with their entrepreneurship education offerings. There is room to increase the number of students receiving entrepreneurship education because there are benefits regardless of whether the students go on to create their own business ventures.

Entrepreneurship education activities were offered both within the curricula and as extra-curricular activities, providing students with a variety of ways to access entrepreneurship education. While entrepreneurship education focuses on the development of business plans, many universities are increasingly incorporating international best practice teaching methods that provide students with real experiences, either through business simulations and competitions, or actual business start-ups.

Business incubators offer a wide variety of specialised business start-up support services and the services demanded by students are readily available. Moreover, demand for start-up support from business incubators has increased over the last three years in two-thirds of universities. Accordingly, business incubators are planning to increase their support offerings, focussing on post start-up support, access to infrastructure, mentoring and support in the development of prototypes.

AREAS FOR IMPROVEMENT

The OECD and international expert review teams conducted in-depth stakeholder interviews and workshops at six universities in 2011 and 2012: University of Brandenburg; Technical University Ilmenau; University of Applied Sciences Schmalkalden; University of Leipzig; Burg Giebichenstein University of Art and Design Halle; and Martin-Luther-University Halle-Wittenberg. These discussions revealed a number of strengths and areas for improvement that are more widely applicable than to these six universities. The main messages from these case studies include:

- Efforts to commercialise research are on-going but universities need to do more. While this is a challenge for many universities, it is worth pursuing because it offers a potential revenue stream and can provide students an opportunity to participate in the process of generating ideas and taking them to market.
- Universities are expanding their entrepreneurship education and specialized start-up support offerings, but the new initiatives continue to be funded almost exclusively by project funding from the European Commission and Federal and Land governments in Germany. Plans are needed for obtaining sustainable financing from other sources.
- The use of university alumni in entrepreneurship teaching, coaching and mentoring is not being exploited to its full potential. While some universities have systems to provide information to alumni, few universities collect information on alumni. This represents a missed opportunity because alumni are a low-cost resource that can be leveraged in entrepreneurship teaching and mentoring student entrepreneurs.
- Although many universities are effectively using short-term entrepreneurship projects and events to engage and inspire students, they can do more to celebrate successful student entrepreneurs and to promote local entrepreneurs as role models.
- Entrepreneurship teaching methods used range from traditional classroom learning to very cutting-edge approaches. But often too much focus is placed on business plans and students are often not exposed to problem-based learning methods. Teaching should place less emphasis on business plans and increase the use of cross-disciplinary projects, business simulations and short-term start-up projects.

The remainder of this handbook contains short descriptions of inspiring practices from around the world to help universities and policy makers think about methods to address the common challenges faced in support entrepreneurship in higher education institutions. The descriptions provide an overview of each initiative's key activities, provide information on resources needed to undertake the project and some of the results achieved. The evolution of each programme is also presented to illustrate the steps that were followed to reach the current level of activity, along with the factors for success and challenges. The inspiring practices address the areas for improvement observed in the case studies:

-  Commercialisation of universities' research knowledge
-  Financing business start-up support services
-  Engaging alumni for entrepreneurship education and start-up support
-  Inspiring students to be entrepreneurial
-  Strengthening entrepreneurship education

GOOD PRACTICES:
**COMMERCIALISATION OF
UNIVERSITIES' RESEARCH
KNOWLEDGE**

CHALMERS SCHOOL OF ENTREPRENEURSHIP AND ENCUBATOR AT THE CHALMERS UNIVERSITY OF TECHNOLOGY, SWEDEN

Rationale and nature of programme

Rather than teaching about entrepreneurship, this programme helps students to think like an expert entrepreneur while creating significant new ventures. It offers a two-year programme for master's students, primarily engineers and scientists, where student teams are matched with pre-vetted new technologies. Over the course of the programme, the teams help transfer the technology into a viable business venture. Typically, these nascent ventures are housed on-site at the internal accelerator called the "Encubator" (Education + Incubator). The goal is to facilitate the co-evolution of both ventures and entrepreneurs, a common theme of venture creation programmes.

In the mid-1990's, the Chalmers University of Technology concluded there was an unmet need for stimulating entrepreneurial behavior in students and the community. Parallel to that was an equally unmet need to bridge the divide between inventors with ideas, especially within the university, and the marketplace. This programme aligns a student team with technology-based ideas that were recruited and contracted by the university. Pedagogy emphasises action-based learning to give students a foundation in both theory and practical knowledge, which they utilise in real-time

while creating nascent high-growth potential ventures. Students have an ownership stake and the student teams are supported by educators, practitioners, coaches and mentors, investors, and service providers from the local, national, even global entrepreneurial community.

Activities

Students enrol competitively at Chalmers for this two-year action-based learning master's degree and acceptance hinges on exhibiting strong interest in entrepreneurship and/or technology commercialization. In the first year of the programme, students learn business and entrepreneurship skills through problem-based learning experiences. This includes learning how to assess new technologies, introducing students to the realities of new venture creation and technology development. In the second year, three-person teams are matched with ideas that originate from the university or community to be incubated, thus forming a potential new firm. The goal is external funding, acquisition or strategic partnering for the nascent venture. To reach the needed proof of concept, the teams develop and validate a viable, sustainable and scalable business model, develop a working prototype where possible and develop pitches and demos for the new product(s).

The key steps in this process are (1) situated, interdisciplinary learning within a formal innovation system, (2) pre-incubation where a group of people who finance and manage the extraordinary efforts needed to recruit future entrepreneurs and develop innovation projects, (3) co-immersion in a broad, rich entrepreneurial network including alumni, researchers, and other key stakeholders in the innovation system and beyond, and (4) the carefully matched venture team which will have varying degrees of involvement by the inventor.

Resources

Faculty is primarily supported by the university with a large contingent of adjuncts and subject-matter experts from the community. The programme also receives sponsorship and support from external stakeholders who are active in the programme as coaches and mentors.

Achievements

Since 1997, CSE has successfully educated around 300 aspiring entrepreneurs and, since 2001, incorporated more than 25 companies with a current market value of approximately EUR 66 million. As of 2010, 47 technology ventures have been launched with an 80 % survival rate and combined turnover of EUR 30 million and 270 employees.

Moreover, these ventures are created from intellectual property that was too early stage or too uncertain for traditional incubators in Sweden, suggesting that the CSE/Encubator model addresses a visible gap in the entrepreneurial ecosystem.

Evolution of the programme

The programme began in 1997 with initial programming to provide action-based learning in entrepreneurship. By 2001, it had become apparent that an incubator was needed, co-located with the academic entrepreneurship centre, to provide access to mentors and coaches from the community. As a result, the Encubator was formally launched in 2001, which gave the programme its current structure.

The average in-take of students between 2001 and 2005 was approximately 20 and since 2006 the average number of new students accepted has been 32. As the programme has evolved, it has also grown significantly in terms of engagement with the entrepreneurial ecosystem with entrepreneurs and service providers offering mentoring and other support for the nascent ventures. More importantly, there is increasing co-immersion where the student teams and faculty are not just increasingly immersed in the entrepreneurial community, but the entrepreneurial community is increasingly immersed in the programme.

Success factors

The key to success is that students are deeply immersed in real business venture projects with significant consequences. This drives deep, transformational learning. It also builds entrepreneurial competences through a set of tasks such as developing proof-of-concept while maintaining focus on developing a true entrepreneurial mindset. Also contributing to this success is a deep co-immersion with the entrepreneurial ecosystem, which is essential for learners to generate deep cognitive changes that help them move toward the mindset of an expert entrepreneur.

Challenges

Despite its success, the Chalmers School of Entrepreneurship faces a constant struggle with potential rivals and competitors for funding and for students. While Chalmers is a leading programme, it is only as good as its most recent "crop" of ventures and it constantly works to improve its offerings and to build a deeper co-immersion. Another set of challenges arise from the highly constructivist mode of action-learning used in this programme as there is often opposition to this learning approach from "traditional" educators and the university.

UNIVATIONS GRÜNDERSERVICE AT MARTIN LUTHER UNIVERSITY HALLE-WITTENBERG, GERMANY

Rationale and nature of the programme

Univations Gründerservice is the start-up service run by Martin Luther University Halle-Wittenberg (MLU) in close co-operation with Univations GmbH Institute for Knowledge and Technology Transfer. The programme takes an integrated approach to promoting enterprise culture at MLU and other universities and research institutes in the region. It raises awareness among students and academics for entrepreneurial thinking and behaviour, develops practice-oriented courses and seminars in entrepreneurship and helps innovation potential in the different departments at the university to be identified and commercialised. Start-ups and young entrepreneurs are given intensive assistance during the realisation of their project and are assisted in their search for start-up and growth capital. The main motive for systematically supporting growth-oriented research-based start-ups is to create high-value jobs and to encourage the development of a healthy SME sector in the medium- to long-term.

Activities

Univations is active in 4 strategic areas: 1. Comprehensive awareness-raising and communication to promote entrepreneurial attitudes; 2. Practice-oriented teaching of entrepreneurial skills, plus interdisciplinary research; 3. Professional development and differentiated commercialisation of research results; 4. Situation-specific and market-oriented practical support for start-ups.

Building on approaches already present in entrepreneurship teaching, Univations creates courses, seminars and content on entrepreneurial skills, and these are then anchored in the regular teaching programmes across the departments in the form of mandatory subjects. A part-time Masters programme is planned. An example of Univations' activities developing and commercializing research is the Scidea ideas competition organised by MLU which is open to students and researchers at all the universities and research institutes in Saxony-Anhalt. Another example of practical support for start-ups are the workshops set up by MLU for entrepreneurs in biosciences and nanostructured

materials. The workshops include laboratory facilities, allowing technology development work to be carried out. A main focus of the practical support is to develop a range of options relating to start-up and growth financing, particularly in the form of private and institutional venture capital.

Resources

The activities described above have been developed and co-ordinated by Univations GmbH Institute for Knowledge and Technology Transfer, which was established in 2006 as an associated institute at MLU. This brought expertise and project organisation in the field of entrepreneurship together under one roof, and established an expert, flexible and market-oriented service provider. The start-up and commercialisation strategy currently receives EUR 1.6 million in funding from the Federal Ministry of Economics and Technology in conjunction with funding from the European Social Fund (ESF). The operations are carried out by a staff of eight; an additional 17 jobs are funded by the State of Saxony-Anhalt and ESF as part of the ego.KONZEPT programme.

Achievements

More than 400 start-up projects have been supervised by Univations since 2004 (215 businesses have been established) and over EUR 25 million in finance and funding has been provided to start-ups. More than 500 enterprise qualification events have been staged in the same period. Courses and seminars currently reach 5 % of MLU students. The strategy of integral promotion of innovation and entrepreneurship received an award in 2011 from the Federal Ministry of Economics and Technology in the Germany-wide EXIST "Gründungskultur – Die Gründerhochschule" competition. With regard to the creation of permanent structures and framework conditions for entrepreneurial and transfer activities, a service centre has been created within MLU's central administration offering researchers information, advice and support in matters regarding intellectual property, inventions and their commercialisation.

Evolution of the programme

Starting with the basic qualification and advice service offered by Univations when it was established in 2004, additional model projects have been conceived and realised in the meantime. These include the university business plan competition Futurego, the Scidea initiative funded by the Federal Ministry of Economics and Technology, Nano-Entrepreneurship-Academies (NEnA) supporting start-ups by researchers in the so-called MINT disciplines (mathematics, IT, natural sciences, technology), and "Investforum" Saxony-Anhalt, which has become one of the most important platforms for procuring venture capital investment in central Germany. The Kreativmotor project began in 2010 and supports the growth of young enterprises in the creative industries by offering individual consulting and matching services between industry and academia. The two start-up workshops for the biosciences and nanostructured materials offer important infrastructure for researchers and students interested in entrepreneurship. The Gründungsmonitor survey 2011-2013 carried out by the Univations Institute resulted in a concept being drawn up on how to improve academic entrepreneurship at universities and research institutes in Saxony-Anhalt.

Success factors

The model is based on existing structures and contacts in the entrepreneurship environment in Saxony-Anhalt and within MLU. The deepening university network, combined with the market-oriented approach, creates the ideal conditions for spin-offs from research and helps them achieve sustainable growth and a solid position in the market. Also important for the success of the activities to establish entrepreneurship culture at the university is the genuinely active support from the Rector's office which takes the form of the Prorector for Structure and Finance also holding the project directorship.

Challenges

A central task is to create a living culture of entrepreneurial thinking and behaviour at the university and this must permeate through all of the university's hierarchies and relevant bodies. In concrete terms, this means that internal challenges at MLU include convincing university leadership of the need to support researchers with effective services relating to the transfer of knowledge and technology; infusing new and established courses, seminars and degree programmes with entrepreneurship-related content; and putting in place incentive schemes to persuade academics to take on roles as ambassadors and promoters. In the light of austerity measures, there is a growing challenge to identify transfer potential in research

GOOD PRACTICES:
**FINANCING BUSINESS
START-UP SUPPORT SERVICES**

FINANCING BUSINESS START-UP SUPPORT SERVICES AT THE UNIVERSITY OF STRATHCLYDE, UNITED KINGDOM

Rationale and nature of the programme

The University of Strathclyde is based in Glasgow in the West of Scotland, a region that relied on heavy industry from the Industrial Revolution until rapid de-industrialisation in the 1980's. The University was a pioneer in encouraging university spin-outs and cross-faculty entrepreneurship education and opened one of the UK's first university business incubators in the 1990s. It has since developed a wide range of services for start-up entrepreneurs funded from a mix of internal, public and private sources. Typically, small-scale internally-funded initiatives have been expanded with long-term "equity" funding from alumni and finance houses and limited life "grant" funding from regional, national and EU government agency programmes. As pump-priming grants end, the University has reverted to in-house funding at sustainable (often lower) levels, supplemented by voluntary work of students and alumni. New activities are continually being piloted.

Activities

The university provides a full service of "soft" to "hard" start-up support activities for staff, students and alumni entrepreneurs. These range from for-credit entrepreneurship education at one end through enterprise training, mentoring, net-

working and encouragement activities, to small grant schemes, significant equity investment funds, and in-house incubation facilities. These are delivered by a variety of service and academic departments, often working together to deliver activities. Co-ordination is provided by a monthly "Enterprise Forum" administration meeting under the chairmanship of the senior officer with responsibility for Knowledge Exchange.

Resources

The Hunter Centre for Entrepreneurship (HCE) currently has 12 full-time research faculty, including 3 full professors and 15 PhD students. The Technology Transfer Office (TTO) has a full-time spin-out manager, IP manager, enterprise advisor, and an administrator for the Strathclyde Entrepreneurial Network. An alumni events manager is shared between the TTO office and the Alumni and Development Office. There are 45 Enterprise Partners, who are experienced alumni volunteers that mentor younger entrepreneurs. Through the "Enterprise VIP", MBA students, trained by the HCE, coach students, staff and alumni entrepreneurs who are developing and testing new enterprise ideas. The business incubator has 3 full-time staff and is based in a central campus building.

Achievements

After runner-up as UK Entrepreneurial University of the Year in 2009, Strathclyde was awarded UK University of the Year 2012. Strathclyde was ranked 2nd in Scotland and 7th in the UK in terms of spin-out formation between 2001 and 2011. It has formed over 50 spin-out companies, of which around 40 are still trading in some form, with sales of approximately £80 million per annum and employing around 700 people. All major initiatives are still operating after the ending of initial funding.

Evolution of the programme

The following provides some highlights of the evolution of entrepreneurship support at the University of Strathclyde and indicates how different initiatives were funded. These initiatives were funded from a wide range of sources including government, private sector, other universities and internal funding.

- ▶ **1990:** Strathclyde opens Scotland's first university incubator (Strathclyde University Incubator: SUI) with equal funding from the university, an enterprise agency, a bank and a venture capital house.
- ▶ **1996:** Strathclyde Entrepreneurship Initiative (SEI) opens with internal funding from the Principal's Office to make entrepreneurship electives available to all students.
- ▶ **1999:** Technology Entrepreneurship for Post-graduates, an evening training programme, started at SEI, funded by a neighbouring university (in return for teaching provision), regional and city enterprise agencies, ERDF, and a private educational trust. Strathclyde with a neighbouring university were awarded £3.3 million of government funding for a professionally managed seed capital fund (jointly funded with a Trust and a charitable foundation).
- ▶ **2000:** SEI was renamed the Hunter Centre for Entrepreneurship (HCE) following a £5 million endowment from Sir Tom Hunter, alumnus, entrepreneur and philanthropist. A Business Plan Competition launched, managed by an alumnus entrepreneur-in-residence with £40 000 prize money from an enterprise agency and a bank. Strathclyde with 4 other Scottish universities were awarded £4 million funding for the "Scottish Institute for Enterprise" (SIE) from UK Government "Science Enterprise Challenge" Fund, enabling student business advisors and an additional lecturer to be hired
- ▶ **2002:** Annual day-long "Celebration of Entrepreneurship" was launched with events for students, staff, alumni and the community with funding from private sector sponsors.
- ▶ **2003:** Strathclyde 100 (S100) was launched, which is an exclusive invitation-only network

of successful alumni and friends of the university that meets 3 or 4 times per year to listen and give feedback to new businesses started by students, staff and alumni. It is led and funded by Alumni and Development Office and S100 members volunteer to mentor early-stage entrepreneurs.

- ▶ **2004:** Strathclyde Entrepreneurial Network (SEN) was launched for entrepreneurial students and young alumni. It is a series of networking events run by TTO staff and a student champion funded by Scottish Institute for Enterprise (SIE).
- ▶ **2005:** £950 000 SEEKIT funding (Scottish Government and ERDF) was secured by TTO to grow services to young alumni entrepreneurs (e.g. advisors, events, networking) for 3 years and the funding was renewed for another 3 years in 2008.
- ▶ **2008:** A new fund for spin-outs was created with Braveheart, a Scottish venture capital company.
- ▶ **2011:** Strathclyde Academy of Distinguished Entrepreneurs (a Hall of Fame) launched as a low-cost reward system for alumni.
- ▶ **2012:** SUI launches Gabriel Investments, a business angel syndicate to channel start-up funds to high quality start-ups and a 6-week Enterprise Academy was launched for students, run by VIP students.

Success factors

Enterprise activities fit the university's mission as "the place of useful learning" and are encouraged because they contribute to the university's "third mission" of knowledge exchange, to building long-term relationships with alumni, and to supporting the careers of faculty and alumni. Enterprise activities at Strathclyde rely on co-operation and co-ordination between service and academic departments working together on many different projects and leveraging the goodwill and energy of students and alumni. There has been encouragement of innovation from below rather than central planning of an over-arching "enterprise strategy", but senior officers play a vital co-ordinating role.

Challenges

An early entrant to enterprise activities with a wide set of start-up services, Strathclyde faces the challenge of staying fresh with its enterprise offerings, and of presenting a co-ordinated, professional service to students, staff and alumni. Another challenge is the sustainability of support after pump-priming funds are exhausted. It is meeting these challenges through the Enterprise Forum and through leveraging student and alumni. A final, welcome, challenge, will be to make the most of the new £100 million Technology and Innovation Centre now being built on campus.

BUSINESS INNOVATION CENTRE (GRÜNDERWERKSTATT) AT BEUTH HOCHSCHULE FÜR TECHNIK BERLIN, GERMANY

Rationale and nature of the programme

The Business Innovation Centre (Gründerwerkstatt) at Beuth Hochschule für Technik Berlin was established in 2004 to promote technology-oriented, innovative business ideas and new businesses started by students in the final phases of their degree courses and by recent graduates. The first 10 teams moved into new rooms provided by Beuth Hochschule in April 2005. Communication and mutual exchange between private business and research is a central goal of start-up support in Berlin, as is the realisation of innovative products and services. The services offered by Beuth Hochschule für Technik Berlin are open not only to the university's own students and graduates but also to every graduate entrepreneur resident in the city.

The Business Innovation Centre project is currently in its fifth re-incarnation and is the result of good co-operation between the Beuth Hochschule für Technik Berlin and Berlin's Senate Department for Science, Technology and Research. The Centre also actively participates in a broad network of partners in academia and business involving professors at the Beuth Hochschule, Business Angels Club Berlin e.V. and a business association (Unternehmensverbände Berlin-Brandenburg e.V.).

Over the past 9 years, the project has supported over 80 start-up teams and business ideas with the objective of preparing them for the market and ensuring that they put themselves in a sustainable position.

Activities

The participants in the project are selected in a two-stage business plan competition. On average, 5 to 7 teams are awarded a place in the Business Innovation Centre. The entrepreneurs in the winning team receive grants of up to EUR 4000 per month for a maximum of 18 months to cover living costs plus free-of-charge use of fully equipped office space and meeting and conference rooms. They also have the opportunity to use laboratory facilities and other infrastructure at Beuth Hochschule für Technik Berlin, to take advantage of mentoring and coaching by university lecturers, be put in touch with network partners and receive business and funding consulting services without additional costs.

The open, communicative design of the workplace allows participants to come into contact and benefit from each other's experience and skills through constant dialogue. Younger teams in particular profit from the greater experience of teams that have been part of the Business Innovation Centre for some time.

Resources

The Business Innovation Centre at Beuth Hochschule für Technik Berlin receives financing from the European Social Fund channelled through the Berlin Senate Department for Science, Technology and Research. Co-financing is provided by the Beuth Hochschule itself. The programme is realised and managed by a project leader, a project co-ordinator, one member of staff and several student assistants.

The business association Unternehmensverbände Berlin-Brandenburg e.V., the Business Angels Club Berlin e.V., the Technology Coaching Centre, and lecturers and professors at Beuth Hochschule are all important partners. The wide network includes entrepreneurs, alumni, banks, insurers, funding institutes, legal and marketing experts, coaches, trainers and investors.

Achievements

Over 80 start-ups have been assisted long term since 2005, and 157 entrepreneurs have been helped to start their careers. The companies established out of the programme have resulted in the creation of approximately 300 jobs in Berlin and new opportunities for interns and recent graduates. In addition, sufficient business has been generated to provide work for up to 60 freelancers. Of the entrepreneur teams who have left the Business Innovation Centre, just over 80 % are still active on the market, having survived the critical first years of existence.

25 teams have won prestigious national and international awards in start-up and business competitions.

Evolution of the programme

The fundamental structure of the programme has not changed since it began in 2005. The model chosen has proved effective and has been recognized as a Best Practice model several times. The direct and close relationship between research and business guarantees the direct transfer of technology, and also encourages the development and realisation of sustainable, financially sound business concepts. The growing number of applicants competing for Business Innovation Centre grants shows that the programme is attractive and optimally tailored to the needs of entrepreneurs and students interested in starting a business.

The original 10 teams in the Business Innovation Centre have now grown in number to 19, who are at different stages in the start-up process.

Success factors

A major factor in the project's success has been the productive co-operation with the Senate Department for Science, Technology and Research and funding from the European Social Fund. The funding allows the teams to concentrate completely on the start-up phase of their company and on establishing it on the market, and to make a mistake without it threatening their livelihood or the existence of the business. Another major contributor to the success of the programme is the open, communicative work atmosphere and the rapid and direct exchange between the teams.

Challenges

The challenge for the programme is to find promising teams and ideas that can profit from the expansive network and achievements realised in recent years. At the same time, network partners and alumni need to be more closely involved in shaping the project. As a result of increasingly deep cuts in funding, alternative forms of finance for the Business Innovation Centre must be developed.

RESEARCH CREATING REALITY – DEVELOPING FINANCIALLY SUSTAINABLE SPIN-OFF SUPPORT AND MANAGEMENT AT HUMBOLDT-UNIVERSITÄT ZU BERLIN, GERMANY

Rationale and nature of the programme

Excellence in teaching and research makes Humboldt Universität zu Berlin (HU) a hotbed of innovative ideas and concepts, and helps the university contribute to social and economic development on the local, regional, national and international levels. The transfer of knowledge and technology is a central and increasingly significant mission for the university, and is demanded by both businesses and political decision-makers. An active and successful programme supporting spin-offs is of critical importance in this process. The institutions charged with this task at Humboldt University are Humboldt Innovation GmbH, the university's transfer company, and the research service centre (Servicezentrum Forschung), which together pursue the following goals:

- ▶ Establishing innovative businesses and long-term jobs
- ▶ Increasing regional competitiveness
- ▶ Promoting a "culture of enabling" for entrepreneurially-inclined "Humboldtians"
- ▶ Fostering entrepreneurial thinking
- ▶ Validating university research on the market
- ▶ Generating revenues from university expertise in order to support spin-offs

Activities

In order to develop the long-term potential, particularly for knowledge and technology-based spin-offs, the university uses the following structures and instruments:

- ▶ **TRANSFER MANAGERS:** two transfer managers advise researchers on identifying and analysing potential for commercial applications in their pure research. The managers also assist with qualification in transfer-relevant fields, with networking with industry and with applying for research programmes that promote transfer.
- ▶ **SPIN-OFF MANAGERS:** two spin-off managers assist projected and actual spin-offs to develop business concepts, to apply for research funding and follow-up financing, and to look for co-founders.
- ▶ **SPIN-OFF ZONES:** the spin-off managers also manage HU's Spin-Off ZONES (the university's incubator). The centres have over 1400 m² of floor space available with approximately 100 workspaces, offering space and a creative environment to develop innovative ideas into viable business concepts.

- ▶ **SPIN-OFF SCHOOL:** the Humboldt Spin-Off School hosts seminars and interactive events related to spin-offs and entrepreneurship. Highlights are the Education Corner featuring short informative videos, and a series of seminars entitled Humboldts Unternehmerbausteine, or (Humboldt's Entrepreneur Building Blocks).
- ▶ **SPIN-OFF NETZWERK:** spin-off support at HU has access to a large network, both inside and outside the university. The internal network involves active professors as enterprise ambassadors and a student initiative called START. The external network includes HU alumni entrepreneurs, entrepreneurs in residence, businesses, well-known figures in Berlin's entrepreneur scene, funding and finance partners, the B!GRÜNDET entrepreneur network, the Transfer Allianz and service institutions such as ipal, IHK, TSB, TCC and Berlin Partner.
- ▶ **ADMINISTRATION AND BODY OF RULES:** administrative rules must be amended if an enterprise promotion programme is to develop successfully. HU is pursuing this goal with an entrepreneur-friendly patent and ownership strategy, among other approaches.

Resources

The state and business both benefit equally from successful university spin-offs, and as a result Humboldt-Innovation GmbH and the research service centre (Servicezentrum Forschung) are working towards a model that involves both public and private sector financing structures and instruments designed to promote entrepreneurship. Public funding comes from the university budget and funding programmes operated by the state of Berlin, the Federal Government and the EU. Among the private sources are revenues from consulting, coaching, agency, sponsoring and fundraising, and from holdings in companies. The private funds are channelled through Humboldt-Innovation GmbH, highlighting the importance of the interactions between a commercial transfer company and industry.

Achievements

Of the 51 spin-offs from HU that have been assisted since 2005, a total of 45 are still active today – a survival rate of over 80 %. These spin-offs currently employ more than 500 people. In 2011, HU spin-off UPcloud was chosen as Start-up of the Year in Germany and another HU spin-off, Us-erlutions, was Internet Start-up of 2012. The university also topped the important EXIST start-up grant league table in Germany in 2012. Over EUR 10 million has flowed from private funding sources (crowd investment, business angels and venture

capital) into HU's spin-offs, helping both the businesses and the state of Berlin, and bringing positive effects on the jobs market. Crowd investment is a new instrument and since May 2012, 4 HU spin-offs have raised around EUR 550 000 from this source.

Evolution of the programme

The establishment of Humboldt-Innovation GmbH in 2005 and the award of funds from the EXIST III (2009-2012) funding programme operated by the Federal Ministry of Economics and Technology were decisive elements in the establishment of enterprise support at HU. The addition of spin-off centres in 2010, 2011 and 2012, the expansion of the business network, the development of re-financing instruments and the allocation of ESF funds by the Berlin Senate Administration for Economics, Technology and Research in 2012 were further steps in the strengthening of the structures and instruments promoting spin-offs at HU.

Success factors

Factors in the success of spin-off support are innovative university research, the flexibility and market-orientation of Humboldt-Innovations GmbH as a commercial business, the close co-operation between Humboldt-Innovation GmbH and the Servicezentrum Forschung, the support from the university's President's Office and the faculties, the extensive local, national and international network, and the support from the Federal Ministry of Economics and Technology and the Berlin Senate Administration for Economics Technology and Research.

Challenges

The greatest challenge for university entrepreneurship programmes is to anchor and safeguard the structures and instruments created for the long-term. In addition, students should be made aware of entrepreneurship as a topic as early as possible in order to generate a strong pull effect, attracting students to entrepreneurship. At the same time, the perception of knowledge and technology transfer as a factor in the success of a region must continue to be nourished among political decision-makers.

PROMOTING START-UPS AT HOCHSCHULE HARZ, GERMANY

Rationale and nature of the programme

The highly practice-oriented nature of education offered at universities of applied sciences makes promoting start-ups a logical addition to the offerings. Hochschule Harz University of Applied Sciences has operated a number of initiatives and programmes to promote and support start-ups for a number of years. Taken as a whole, these programmes combine to encourage and facilitate the start-up process.

The process of education and motivation begins not with the students at the university but in events held in schools throughout the state of Saxony-Anhalt.

Various courses build on this foundation during university programmes, as do start-up networks and workshops in which ideas can be developed into concrete form or start-up teams can be founded.

Activities

The programme at Hochschule Harz is composed of several components. "ego.on tour" and the "ego.summer academy" build directly on each other and are, along with "ego.tech-on", part of the "ego.start-up campaign" run by the state of Saxony-Anhalt with the goal of giving information to young people who are interested in finding out more about entrepreneurship.

In "ego.on tour", the ego. team from Hochschule Harz visits a number of schools all over Saxony-Anhalt, providing interested young people the chance to demonstrate their abilities as a manager in a business plan game and to win one of the coveted places at the ego. summer academy in Wernigerode. At the summer academy, the young people have 3 exciting days of workshops, team games, challenges and parties with the ego. team on the university campus in Wernigerode. In addition to being fun, the activities also show potential entrepreneurs some of the challenges and opportunities they can expect as a young entrepreneur. During their course of studies, the students and

university staff can take advantage of the TEGSAS enterprise network at Hochschule Harz. The TEGSAS network was created in order to support young entrepreneurs as they make the transition into self-employment. TEGSAS is dedicated to supporting technological start-ups at universities in northern Saxony-Anhalt. It offers specially designed support activities for students, members of staff and former students from northern Saxony-Anhalt to support them on their path to setting up their own business.

Students can also take part in Innovation Days held annually at the Hochschule Harz. This 2-day event features workshops in which start-up ideas are picked up, given concrete form and brought to maturity as business models.

Resources

Along with "ego.tech-on", the "ego.on tour" and "ego.summer academy" are part of the ego.start-up campaign of the state of Saxony-Anhalt. The Hochschule Harz was awarded 4 new jobs from the state funding, with the result that 4 members of staff work with schools.

The TEGSAS project is funded by the Saxony-Anhalt Ministry for Science and Economic Affairs with money from the European Social Fund and the state budget. This funding means that students at Hochschule Harz have access to a professional scout, courses and workspaces to operate in. The students created Innovation Days themselves as their own initiative at Hochschule Harz, allowing networking between entrepreneurs, financiers and to give them the opportunity to make contacts for the future.

Achievements

During the 12th edition of the ego.summer academy, the 4-person ego.project team consisting of students and graduates from Hochschule Harz, visited vocational and secondary schools throughout Saxony-Anhalt. Approximately 150 young people are made aware of the topic of entrepreneurship during the tour, and are informed about the discussion groups, workshops, plan games and big "ego. rally" treasure hunt/challenge where they can apply their knowledge and skills actively. Travel to Wernigerode by train, accommodation in the youth hostel, food and drink and participation in all activities is free of charge.

Evolution of the programme

The establishment of the student initiative Innovation Days has given the entrepreneurship programme at Hochschule Harz a new long-term dimension as it helps build and support networks that can be passed from one cohort of students to the next alongside the programmes supported by the ego. initiative. The anchoring of the initiative among students creates an intrinsic motivation that is passed between cohorts.

Success factors

The increase in the numbers of participants in the various initiatives every year demonstrates the activities' success. The numbers of spin-offs resulting from this show, at least indirectly, that effective support is more than necessary. There have also been success stories among alumni who, after working for several years, have used the programme, which can be accessed at any time, to set up their own company.

GOOD PRACTICES:
**ENGAGING ALUMNI FOR
ENTREPRENEURSHIP EDUCATION
AND START-UP SUPPORT**

ENTREPRENEURSHIP CONTEXTS AND DYNAMICS MODULE IN EMLYON EXECUTIVE MBA, FRANCE

Rationale and nature of the programme

This programme is a compulsory 40-hour module for participants of the EMLYON Business School's Executive MBA. Launched in 2010, the module accepts 50 participants each year. It is offered on weekends to accommodate participants' career commitments. The module is developed around new venture creation, business takeover, and organisational entrepreneurship. It has three main learning objectives:

1. Enable participants to understand entrepreneurship, its rationales and dynamics, and the factors of success and failure of new ventures, takeovers and organizational venture processes;
2. Introduce participants to the specific concepts and analytical and decision-making tools that can be applied in practice; and,
3. Enable participants to reflect upon and develop their own position regarding entrepreneurship, in terms of interest, career prospects, motivations, strengths and weaknesses, and the potential for an individual entrepreneurship project.

One of the unique features of the programme is that external contributors and individuals featured in the cases studies are all alumni of the EMLYON Business School MBA programme. This immersion in real-life alumni projects enables the participants to better understand the nature and complexity of the situations studied.

Activities

The programme is divided into three sections corresponding to the themes: new venture creation, business takeover and organisational entrepreneurship. Each section begins with a presentation of the issues and challenges related to each theme, and participants complete relevant case work in groups to understand the challenges faced. In the case of new venture creation, participants work on decision-making and commitment processes, as well as on strategies for the survival and development of the new organisation. When studying the takeover process, participants study case examples and make a diagnosis of the main risks involved. For organisational entrepreneurship, participants analyse organizational arrangements and schemes that are meant to facilitate entrepreneurial behaviour at the individual and collective levels. This is intended to help students realise the importance of the conflicting rationales that oppose the intrapreneur and the organisation.

Case work is presented to the class and is further analysed and discussed with the class, applying concepts and tools previously introduced (readings about entrepreneurship concepts and tools are a prerequisite for the module). The aim is to better understand the problems faced, the potential solutions and how the problems could have been dealt with differently, based on the entrepreneur's and his/her advisors' point of view. During the case work presentations and discussions, the main protagonists of the cases studied are present to share their perceptions of the experience. The case studies all relate to situations involving alumni from the EMLYON Business School MBA, who come to testify and share their experience. There are typically 5 alumni involved in each 40-hour module.

Resources

This module is an integral part of the Executive MBA programme and is therefore financed by EMLYON Business School.

The pedagogical resources are case studies created by EMLYON Business School professors based on the situations encountered by the alumni entrepreneurs of the school. In addition to the case studies, the module also uses academic articles about entrepreneurship, often contributed by professors of the school.

Alumni participation is done on a voluntary basis. In addition to strong participation from alumni entrepreneurs, finance (business angels, venture capitalists) and start-up experts are regular guest contributors in the module.

Outcomes

An impact study has yet to be conducted. Many participants in the Executive MBA programme have business venture projects when they join the programme, and others identify and pursue opportunities in the course of their studies, often during the Entrepreneurship Contexts and Dynamics (ECD) module.

The satisfaction rate among the participants of the ECD module is very high. Participants are required to keep a logbook registering their critical reflections, what surprised them, and finally, what they have learned. This feedback is required for every significant step in the module, whether it concerns a case study, an entrepreneur's account of experience, an expert's intervention, or the acquisition of new concepts.

Evolution of the programme

Entrepreneurship education is central to the EMLYON Business School as indicated by their mantra "Educating Entrepreneurs for the World". The module began as an elective module in 2005 and after regularly receiving excellent satisfaction ratings by participants, the Head of MBA Programmes of EMLYON Business School made the module mandatory in 2010. Its structure, contents and contributors have little evolved since 2010.

There are plans to further develop the module to include short study visits (less than a week) to various European countries. Groups of 5 participants would study entrepreneurial situations in these countries, in order to identify key elements of the context that can help explain the factors of success or failure related to new venture creation, business takeover or organizational entrepreneurship. This extension of the programme is expected to be operational beginning in 2014. The countries and situations will be selected using the academic networks of the schools' professors in entrepreneurship, who will then validate the relevance of the cases identified and supervise the follow-up activities.

Success factors

The engagement of the school's alumni in the module is undoubtedly a key factor of success. They come to meet the participants of the module and share their experience, successes and failures with them, explaining their decisions and rationale. Most of them have been previous participants in entrepreneurship programmes at EMLYON Business School and they like the opportunity to help in developing case studies based on their ventures and in meeting MBA students having a strong interest in entrepreneurship. Many EMLYON alumni who regularly participate in the programme are eager to contribute to the programme and have contacted the Programme Co-ordinator or somebody else in the school to indicate their willingness to be involved in the programme.

NEUDELI AT BAUHAUS-UNIVERSITÄT WEIMAR, GERMANY

Rationale and nature of the programme

neudeli is the entrepreneur workshop at the Bauhaus-Universität Weimar. It sets itself the goal of fostering ideas, concepts and prototypes generated within the university and bringing them closer to commercial and social application.

neudeli was created 12 years ago and has established itself as the central point of contact for all potential entrepreneurs among the students, graduates and members of staff in the university's four faculties. The workshop offers innovators, inventors and creative people an attractive and inspiring environment to begin their entrepreneurial careers. *neudeli* is completely in the Bauhaus tradition of one-stop-shop test facilities as places of trial and error and experimentation. *neudeli* is, however, also a place of advice and it arranges events, talks and workshops on self-employment and entrepreneurship throughout the year. In addition to the advisory function, the range of activities encompasses teaching and research: the focus here is on prototype-driven innovation management and new and critical approaches to management research, particularly in the area of creative management.

Activities

neudeli is active in teaching entrepreneurship as well as in promoting it. Its activities are open to students, graduates and academic members of staff in all of Bauhaus-Universität Weimar's four subject areas (architecture, civil engineering, media and design). *neudeli* is conceived as a one-stop-shop whose activities are based on the following phases:

- ▶ **AWARENESS:** Entrepreneurship education, idea scouting, first information and advice, events such as summer cinema, "open day", involvement in university activities, training/development of entrepreneurial skills (coaching and consulting on start-up processes, workshops, talks, etc.) and growth (matching events with investors, etc.), regular involvement of entrepreneur alumni.
- ▶ **ADVICE:** Guidance on ideas development, business models, business plans and mentoring/advising students, academic members of staff and graduates. Exchange and matching: regular formal and informal meetings for students, start-ups and young entrepreneurs from various industries and at various stages of development. Matching events with potential investors, regular involvement of entrepreneur alumni.

- ▶ **TEACHING AND RESEARCH:** "Prototyping" in entrepreneurship education: multi-discipline student teams (design, media, business administration, computer, etc.); real case studies from partner companies, free-lancers and university projects. Seminars and lectures in innovation and creative management, also on topics in creative industries. Involvement of entrepreneur alumni. Starting in September 2013, a new professorship will expand research and teaching activities in the field of innovation and creative management. A joint programme of study is also in preparation.
- ▶ **SPACE AND INFRASTRUCTURE FOR IDEA DEVELOPMENT:** office space and free use of infrastructure and mentoring by the *neudeli* team. Idea scouting and competitions: annual "idea competitions" and 30-second elevator pitches. Regular meetings between active members of *neudeli* and entrepreneur alumni.

Resources

The current project will last until October 2014. The annual budget is approximately EUR 180 000 (2012) is proved by the Federal Ministry of Economics and Technology, the Thuringian Ministry for Education, Research and Culture, and the Bauhaus-Universität Weimar. There are 3 full-time employees and 3 research assistants.

The most important partners are Friedrich Schiller University Jena as part of the Business and Innovation Campus Jena-Weimar the city of Weimar and businesses in the region. *neudeli* is also a partner in the icebauhaus project and supports several creative initiatives in Weimar.

Evolution of the programme

neudeli was set up in 2001 by Prof. Dr. Matthias Maier as a broad-based initiative in order to promote entrepreneurship at Bauhaus-Universität Weimar. The origins of the organisations and its name go back to an art project that students planned to create in an old shop called "neue Delikatessen." The project went through various stages and phases before becoming a studio with exhibition space for free art projects, which then, in response to students' calls, developed into a workshop supporting and encouraging freelancers and entrepreneurs. The whole house in Helmholtzstrasse is now open to entrepreneurs and students for their own projects; more than 20 teams regularly find space in *neudeli*. The initiative has now grown into a central contact point with 2 to 3 members of staff who as all-rounders cover all the enterprise workshop's activities, from giving advice to teaching to research. Since November 2011, *neudeli* has received funding as part of the Federal Ministry of Economics and Technology's "EXIST Gründungskultur – die Gründerhochschule" programme, along with Friedrich-Schiller University Jena. The objective of the joint project is to develop a shared strategy for improving and safeguarding long-term provision of entrepreneurship support at both universities. In addition, research and teaching in technology transfer, start-up management, and innovation and creative management will be and expanded.

neudeli is supported by Thuringia's Ministry for Education, Research and Culture as part of its Gründungsnetzwerks der Thüringer Hochschulen. All of the state's higher education institutes are linked into this enterprise network, and take part in regular joint events and meetings.

Success factors

neudeli is seen by students, members of staff and potential entrepreneurs at Bauhaus-Universität Weimar as a place of trial and error and experimentation, which is very much in the tradition of the Bauhaus philosophy. A significant success factor is the possibility of locating advisory services, start-up projects, research and teaching all in one location, in this case a free-standing house with garden and garage. The ideas and projects born here stimulate not just the other users of the house but the university as a whole. A further positive aspect is the fact that the enterprise advisory team and operative staff are also research assistants at Prof. Maier's Chair of Media Management. This means that advice, research and teaching are optimally linked with each other in function and thought. In addition, entrepreneur alumni are actively involved in seminars and lectures and in the entrepreneur advisory service.

GOOD PRACTICES:
**INSPIRING STUDENTS
TO BE ENTREPRENEURIAL**

START-UP ECOSYSTEM AT AALTO UNIVERSITY, FINLAND

Rationale and nature of programme

Aalto University was established through the merger of three universities (Helsinki University of Technology, Helsinki School of Economics and Helsinki University of Arts and Design) in 2010. From its inception the goal was to develop a new “innovation university”, which included promoting a new entrepreneurial spirit and entrepreneurship activities within the university. The idea for the merger was first introduced by a former rector, Mr Yrjö Sotara of the Helsinki University of Arts and Design in 2005, and the idea was supported by both Government and industry.

Activities

While entrepreneurship is supported throughout Aalto University, a number of specific structures and programmes were created to facilitate the development of entrepreneurship activities. The Aalto Centre for Entrepreneurship (ACE) was established with the aim of creating new businesses from university research and “working as a catalyst for elevating high ambition entrepreneurship from Finland and through the Baltic region”. The centre offers innovation, commercialization, and start-up services for Aalto University researchers, students and other stakeholders. ACE also co-ordinates Aalto’s activities related to technology transfer, IPR, start-up firms and teaching and research of growth entrepreneurship.

In 2011, Aalto Ventures Programme (AVP) was launched to offer education on business ventures and to conduct research on growth entrepreneurship. It is situated in the Department of Industrial Engineering and Management at Aalto University School of Science and works collaboratively with other departments and schools, the ACE, and the Aalto Entrepreneurship Society. The programme drives high-growth entrepreneurship in the curricula, including graduate level programmes, and supports faculty development. It is also involved in offering a wide variety of extracurricular activities in collaboration with Aaltoes.

Aaltoes (Aalto Entrepreneurship Society) is a society for entrepreneurship-minded students interested in learning and promoting entrepreneurship. It was established in 2009 by a student that was inspired by a visit to MIT and its creation was instrumental in launching the new university. Aaltoes “encourages high-tech, high-growth, scalable entrepreneurship and builds a leading start-up ecosystem in Finland and Northern Europe”. The society’s goal is that “Finland will be the start-up hub of Europe and Russia by 2017”. It organises approximately 50 events annually, including Summer of Startups (an accelerator programme for early stage business ideas), Aaltoes Build It (48-hour business creation events), Startup Crawls (visits and trips to local start-ups), pitching sessions and networking and matchmaking events.

One of the programmes that has grown out of Aaltoes and is now run by its own foundation is Startup Sauna. It runs an internship programme for aspiring entrepreneurs to work at high-growth companies in Helsinki and in Silicon Valley (United States) and an accelerator programme for early-stage start-ups from Northern Europe and Russia. Companies in this programme receive coaching from experienced serial entrepreneurs and investors in an intense one-month programme in Helsinki. The Startup Sauna also organizes the "Slush conference", which brings together the early-stage start-up ecosystem in the region to meet top-tier venture capitalists and media from around the world.

Resources

At the creation of Aalto University, the Government invested EUR 500 million to go along with another EUR 200 million invested by industry and other external funds. The Aalto Center for Entrepreneurship currently has approximately 12 experts working in the areas of technology transfer, innovation and start-up services. The centre, along with the Aalto Ventures Programme and entrepreneurship teaching are funded by Aalto University. Aaltoes is a student-run association and therefore relies on the unpaid work of the students. It receives some financial support from event sponsors, as well as some funding from Aalto University, the Federa-

tion of Finnish Technology Industries, the Government Agency Tekes (Finnish Funding Agency for Technology and Innovation), and other Foundations. Startup Sauna is run by its own foundation and funded by Aalto University, the Federation of Finnish Technology Industries, Sitra (the Finnish Innovation Fund) and Tekes (the Finnish Funding Agency for Technology and Innovation), among others. Each programme requires between EUR 150 000 and EUR 200 000.

Achievements

In 2012, 10 companies were started by Aalto faculty and students. Furthermore, the Aalto Center for Entrepreneurship had 215 invention disclosures and transferred 14 innovations to 4 companies. Aaltoes had more than 9000 participants at 45 events in 2011. Startup Sauna matched more than 60 interns through the internship programme and 90 companies have graduated from the accelerator programme for early-stage start-ups since 2010, with more than USD 25 million of funding raised. A study of the 3 in-take cohorts in 2010 and 2011 found that 38 teams graduated and 82% are still active. The teams have raised more than EUR 9 million, of which 11 teams (29% of the alumni) raised more than EUR 260 000 within one year of

graduation. The Slush Conference has also proven to be successful. In 2012, it gathered more than 3500 attendees, 550 companies and 250 investors and journalists for two days in Helsinki.

Evolution of the programme

Entrepreneurship education was first introduced in Finland as part of basic education in 1994. Since that time, universities have increasingly offered entrepreneurship studies at the undergraduate level and through extra-curricular activities. Aaltoes, the student entrepreneurship society, preceded the creation of Aalto University and inspired a shift in university support for entrepreneurship. The creation of the new university quickly led to the development of a "start-up ecosystem" and entrepreneurship programmes and activities inside and outside of the curriculum. Many programmes at Aalto, such as Startup Sauna, continue to grow and are becoming more international.

Success factors

A clear success factor in the Aalto community and its entrepreneurship activities is the combined effort of the university and the student community together with experienced partners. Traditionally, student associations have played a central role in Finnish universities and it was critical to harness their support for entrepreneurship. The community is also highly connected to a network of experienced, serial entrepreneurs and investors to

mentor and assist the start-ups. There are more than 100 mentors available to students at Aalto, which sets the university apart from other university programmes. The political focus on high growth has also been critical for the development of entrepreneurship support at Aalto and government has provided significant financial support. The comprehensive support for entrepreneurship throughout the university has been an important factor in reaching a high number of students and staff, as well as to build linkages with the community.

Challenges

There are a number of on-going challenges for entrepreneurship support at Aalto. First, although Aalto University receives significant financial support, the ecosystem is still heavily based on voluntary, unpaid work of the students. It is not clear if this is sustainable, particularly with the increasing pressure on universities to shorten the graduation times. Universities will be rewarded for students that complete at least 55 ECTS annually and this will be difficult for students that are heavily involved in extra-curricular activities. A second challenge is co-ordinating all of the entrepreneurship structures and activities, particularly since each university had different organisations and activities prior to the merger that created Aalto University.

TECHNOLOGY INQBATOR, ADAM MICKIEWICZ UNIVERSITY FOUNDATION, POLAND

Rationale and nature of programme

Technology InQbator is part of the Poznan Science and Technology Park of Adam Mickiewicz University Foundation. It fills a market need by specialising in support for new and aspiring entrepreneurs who provide products and services that are based on the implementation of new technology.

Activities

InQbator provides support for new start-ups including office space, consulting services, training, networking events and promotional support. InQbator also actively promotes entrepreneurship in the community through entrepreneurship events, training and pre-incubation support for students. InQbator has several unique approaches to inspiring entrepreneurship among students and the local community:

1. Wheel of Fortune radio programme: This weekly radio show is broadcast live every Thursday night in Poznan and provides a platform for information exchanges on entrepreneurship and for sharing best practices. The show is hosted under the auspices of Poznan Science and Technology Park, which co-operates with other local institutions, including Adam Mickiewicz University Centre for Innovation and Technology Transfer and the Poznan Academic Business Incubator. Issues covered by the radio show include:
 - ▶ The entrepreneurial spirit: Why start a business? What does it take?
 - ▶ Leadership: What are effective approaches for new businesses?
 - ▶ Market challenges: How to stay ahead of competition? How to expand to new markets?
 - ▶ Financing: Where to seek financing? What are the investment opportunities in Poland?
 - ▶ Best practices: Profiles of local success stories.
 - ▶ Available support: News on entrepreneurship events and networking opportunities.
2. Poznan Days of Academic Entrepreneurship: This two-day event is a joint initiative of InQbator, Adam Mickiewicz University Centre for Innovation and Technology Transfer, and Poznan Academic Business Incubator and is organised in co-operation with the City of Poznan, local universities and public schools. The event offers workshops and discussion forums on issues such as academic entrepreneurship, starting a business and career planning with an aim to:

- ▶ create a positive climate for academic entrepreneurship;
 - ▶ inspire students to be entrepreneurial;
 - ▶ support networking between start-ups, entrepreneurs and investors; and
 - ▶ promote support services, investment opportunities and best practices.
3. On the Wings of Business TV programme: This 10-episode TV series on entrepreneurship was produced by InQbator and a local production company. Each episode presented the stories of new start-ups and successful entrepreneurs, focussing on the keys to their success. The stories were complemented with business advice from local business support institutions.

Resources

InQbator receives financial support for the radio broadcast from the Ministry of Science and Higher Education and from the National Research and Development Centre. Each show is produced by a team of 7, consisting of a co-ordinator/host and reporter from InQbator, along with 5 reporters from Warsaw, Cracow, Lodz, Wroclaw and Zielona Gora.

Poznan Days of Academic Entrepreneurship (PDAE) was created with financial support from the Ministry of Science and Higher Education and since 2011 it has received support by Poznan City Hall.

"On the Wings of Business" was produced by a project co-ordinator, a host and 5 crew members; financial support was received from the Ministry of Science and Higher Education.

Achievements

PDAE has taken place annually since 2004. With an ever-increasing number of participants, PDAE became an integral part of a new event in 2011, Poznan Days of Entrepreneurship (PDE), organised by the Poznan City Hall. The first edition of PDE gathered more than 4000 participants (including 700 who participated online) and this new event offered more than 30 different meetings and workshops that were dedicated to young potential entrepreneurs, start-ups and experienced entrepreneurs.

"On the Wings of Business" was broadcast by nationwide television for approximately 3 months. Episodes are still available online on websites such as Facebook and YouTube.

Evolution of the programme

The radio show started in 2006 by local student radio (Radio Afera) and InQbator began its co-operation with Radio Afera in 2008 to promote entrepreneurship. As a result of this co-operation, the focus of the show was shifted to promoting entrepreneurship and local entrepreneurs and it was expanded to include other cities in 2011.

PDAE was initially organised with support from the Ministry of Science and Higher Education. Due to an ever-increasing number of participants, the event has become an integral part of a new event in 2011, Poznan Days of Entrepreneurship, organised by the Poznan City Hall. The event continues to evolve and current plans are to incorporate a large-scale city game.

The production of "On the wings of business" lasted 6 months and resulted in 10 episodes that aired weekly on TV. These episodes are still available online.

Success factors

"Wheel of Fortune" relies on their audience and the local business community to identify issues of interest and success stories. Online streaming of the show ensures that it reaches a wide audience.

PDE benefits from government support, which allowed it to develop into a larger event. Involvement and support from the city has given the event a larger platform. A strong organising team ensures

that the event meets the evolving needs and expectations of students, graduates, researchers and entrepreneurs.

The success of the TV programme is partly due to the support received from one of the most prominent local news websites in Poland (<http://biznes.onet.pl/>). Since production has stopped, the television programme continues to reach new audiences online through sites such as Facebook and YouTube.

Challenges

"Wheel of Fortune" and "On the Wings of Business" are governed by the Act on Radio and Television Broadcasting (Journal of Laws of 2004, No. 253) and the biggest challenge for producers and hosts is to balance journalism and promotion – to avoid solely advertising the products and services provided by start-ups and business support institutions.

The greatest challenges for PDAE's organising team are to inspire more students to be entrepreneurial and set up their own companies, to expand co-operation with new local business institutions and to meet the evolving expectations of students and graduates and encourage them to take an active part in the events.

DESIGNHAUS HALLE AT BURG GIEBICHENSTEIN KUNSTHOCHSCHULE HALLE, GERMANY

Rationale and nature of the programme

Designhaus Halle is the enterprise centre at Burg Giebichenstein University of Art and Design in Halle. It sees itself as the “runway” for spin-offs from the university and start-ups in different design-related industries, the applied arts and other areas in the creative industries, and provides office space at favourable rents and ideal enterprise conditions in the interdisciplinary environment of the design campus.

Designhaus Halle links design and commerce, art and market, teaching and profession, assisting students at Burg Giebichenstein to make the transition from learning and studying design to working and living with and from design. It is run and staffed by the Transfer Centre, which also provides a career service and offers a wide range of training and skills development sessions.

Activities

Among the services provided is a career service which offers advice for Burg Giebichenstein students and graduates, regardless of whether they want to work as a freelancer or find employment. The career service also provides workshops, seminars and talks on key professional skills for students. In addition, the centre provides part-time, fee-based skills development courses for the creative industries, SMEs in manufacturing and service industries under the auspices of the national lifelong learning policy.

An industry-specific mentoring programme helps young designers position themselves in their market segments by pairing them with nationally and internationally active experts. Another function is to help students find projects, obtain commissions, and locate jobs and internships.

As a forum for events and communication, Designhaus Halle works to raise public awareness of design-related topics and issues. The range of events held spans talks, exhibitions, company presentations, networking and contact meetings, and hosts “BurgAlumni” events.

Resources

The Transferzentrum – a centre helping graduates find work and offering academic further training for skilled workers and managers in SMEs in Saxony-Anhalt – is funded from European Social Fund resources and by the state of Saxony-Anhalt, with funding secure until the end of 2013. Other financial resources (particularly for renovating and improving the Designhaus building) come from the university's budget.

Partnerships have been arranged with the 6 other transfer centres and a co-ordination office within the state, the University Founder Network Saxony-Anhalt South, Kreativmotor, the national Competence Centre for Cultural and Creative Industries, and other regional (business) associations and initiatives.

Achievements

A total of 62 entrepreneurs and start-ups have been supported in the Designhaus since 2010. The Designhaus was listed as part of the 2010 "Land of Ideas" national campaign, has hosted 114 events with 96 different specialist experts and 3500 participants, run 18 fee-based skills development modules with over 100 participants, offered more than 800 hours of advice through the Careers Service, arranged 1000 internships, part-time jobs, projects and full-time jobs, and been mentioned 400 times in the press.

Evolution of the programme

Opening in 2010, Transferzentrum and its services re-located to Designhaus Halle. More offices were added and the number of tenants increased. A mentoring programme has also been implemented.

Success factors

There is a great need on the part of students as artists and designers are disproportionately likely to intend to become self-employed after graduating.

The Designhaus Halle offers optimal infrastructure (office space, function rooms, skills development and advice, workshop access).

The start-up centre with a wide range of services on offer at a university of art and design is unique in Germany.

Challenges

There are funding-related challenges with regards to safeguarding the long-term future. The structural weakness of Saxony-Anhalt and the lack of consumer goods industries mean that demand for design services is low and support from private sector is weak. There is a need to raise awareness in industry of the competitive advantage brought by good design.

ROBERT-SCHMIDT-INSTITUTE AT WISMAR UNIVERSITY, GERMANY

Rationale and nature of programme

The Robert-Schmidt-Institute (RSI) was founded on 8 June 2011 within the establishment of the "Entrepreneurial University of Wismar". The strategic goal of the institute is to establish an entrepreneurial mind-set across the campus. It is responsible for all entrepreneurial activities, projects and streams on the campus and acts as the contact point for all entrepreneurship activities at the university. The RSI also acts as the interface of science and industry to improve the conditions for SME development in the region through the training of executives and entrepreneurs.

Activities

The core activities of the RSI are training, coaching, start-up support, regional and international networking and research related to business start-up and regional development. One focus of the institute's many activities is to inspire students and the community to be more entrepreneurial. One of the principal ways in which this is accomplished is through seminars, which raise awareness of entrepreneurship among students, develop leadership skills and aid in career planning. Workshops on entrepreneurship and entrepreneurial thinking are organised on- and off-campus to sensitize students, scientists, administrative staff, local business owners and politicians and to encourage them to think and act in a more entrepreneurial way.

RSI also works to inspire students and support the commercialisation of their business ideas through student social clubs and business competitions such as "Ideas regatta", which is competition for all students of the Wismar University. The goal is to bring young dynamic people from different disciplines together to work on new ideas in interdisciplinary teams to develop skills such as team work and creativity. External entrepreneurs have an integral role the competition. They work together with the RSI on the design of the competition, sit on the jury and donate the prizes.

International events are also used to promote entrepreneurship. For example, the institute organises the annual International Conference on Engineering and Business Education (ICEBE). Over the past decade, this event has offered a unique opportunity for academics, business and beginning in 2012, students, from around the world to share their broad array of knowledge and perspectives. The primary goal of the conference is to provide a platform for an exchange of knowledge and experiences on cross-disciplinary issues related to engineering and business education, notably entrepreneurship. The event has been hosted in various international locations such as Manila, Cape Town and Sibiu.

The institute is also involved in a number of entrepreneurship education projects. Since June 2011 the RSI has been a partner in the federal network "Integration through Qualification", which is a project for foreign students. The project introduces them to working life in Germany, including the opportunity to experience entrepreneurship. These students, alongside their studies, spend as much time as possible in a company to learn about the operations of the company and link it to their studies.

Another example is the Student Research and Development Teams Project. This project matches student teams with regional companies that have business ideas that they have been unable to pursue due to a lack of time, human or financial resources. Teams of approximately 5 students from at least two faculties work to develop these ideas under the guidance of a professor, an advisor from the company and a consultant from the RSI. Students learn to budget, communicate with customers and suppliers and present their product or service in real business environments. The goals are to provide students with an experience that will give them self-confidence and realistic experience in the labour market.

Resources

RSI has a total of 11 full-time and part-time staff members, equivalent to 9 full-time positions. Financial resources come from the university budget, private sector resources/grants and fees for services. Four professors and 2 staff members are paid for from the university budget, the remainder is covered by fees received and private sector resources and grants.

Partnerships are very important for the institute. In all of its projects the RSI works very closely with regional companies, the town of Wismar and the district of Nordwestmecklenburg. The collaboration with the chamber of commerce and industry is contractually underpinned through the close collaboration with the economic transfer officer. Additional partners are international and national universities which work together in education and research projects and within the ICEBE.

Achievements

The recently established RSI is the sole contact point for all entrepreneurial activities at Wismar University and has successfully organised a large number of events, workshops and seminars. It promotes its offerings with brochures that are distributed among the students every semester and has had an increasing number of participants in on-campus events and growing awareness of the study offerings (with ECTS credits). In addition, the institute has been growing its partnerships with the business community and international organisations.

Evolution of the programme

Discussions concerning new university structures in Mecklenburg-Vorpommern began in 2005 and Wismar University was encouraged by its partners in industry, local councils, guilds, professional associations, politicians and its international partners to implement its concept "University 2020 – entrepreneurial, competitive, future-oriented". A contract was signed with the Ministry of Education on 27 April 2006 and a pilot project for the entrepreneurial university began. The project was geared towards greater autonomy of the university and the expansion of its financial base of public and particularly non-public sources. One key element in the implementation of the pilot project was the establishment of the "Entrepreneurial University Wismar". While this resulted in a large

number of initiatives and projects that promoted entrepreneurship, these actions were fragmented and not always consistent with the university's strategy. As a result, all entrepreneurship activities in the university were grouped together under the rectorat resulting in the establishment of the RSI in June 2011.

Success factors

The success of RSI is due largely to the centralisation of all entrepreneurship and career activities. This single contact point is advantageous for both internal and external stakeholders. The institute benefits from the flexibility provided by its independence from any faculty or chair and at the same time receives significant support from university management who see RSI as strategically important.

Challenges

The RSI continues to face challenges as a result of its growth from offering project-based services to a financially independent service agency for all students, professors and external partners. Another significant challenge is the need to ensure that the education and start-up support offerings meet the needs of the local economy.

THE RESEARCH AND TRANSFER SERVICE CENTRE AT FRIEDRICH SCHILLER UNIVERSITY JENA, GERMANY

Rationale and nature of the programme

The Research and Transfer Service Centre is a central institute at Friedrich Schiller University Jena. It offers a wide range of services from research funding via research transfer to support for entrepreneurs, and is constantly working to develop them. Its goal is to provide researchers with information on national and international funding options and to assist them in applying for support. An important aspect here is to help the researchers to formulate realistic and project-related goals for exploitation and applications. These are based on patent and market research and other valid assumptions. By working with the project team during the entire project, the service centre is able to assess inventions and undertake steps to protect them with patent applications where appropriate. Until now, exploitation has primarily been in the form of licensing expertise and copyrights and through commissioned research. The establishment of the K1-Start-up service is intended to anchor entrepreneurship in the university environment on a permanent basis. The K1-Start-up services brings together all of the activities undertaken to foster entrepreneurial culture and spirit; it

also professionalises idea scouting and aims to maximise potential transfers by realising business ideas, prototypes and enterprises. While aiming to produce as many spin-offs as possible, it is nonetheless important to ensure that the quality of the start-up is taken into account, and thus also its long-term survival.

Activities

The promotion of research transfer in the form of university spin-offs is a primary goal of the K1-Start-up service. To achieve this goal, the service undertakes various activities.

An interdisciplinary, inter-departmental and inter-university research group in the field of enterprise research and education has been set up consisting of 3 lecturers (junior professor) specialising in technology transfer, innovation and creativity management and entrepreneurship. The theoretical results from research conducted not only flow into academic teaching but are also available for consulting, coaching and transfer processes. The seminars and classes teach enterprise-related information and work to promote entrepreneurial thinking and behaviour at the university.

The K1-Start-up service also consults, coaches and advises students, members of staff and alumni who want to realise their own entrepreneurial ideas. The service covers the entire range from generating ideas, the evaluation and development of ideas, funding nascent activities, the development of a business, to starting a business. Potential entrepreneurs receive guidance and assistance in producing the documents necessary such as business plans. The experience gained in these advisory and coaching activities produce many important stimuli for research activities in the research group.

Resources

The K1-Start-up service is part of the suprarregional Gründer- und Innovationscampus Jena-Weimar and receives funding from the Federal Ministry of Economics and Technology (BMWi) within the EXIST-Gründerhochschule initiative. The K1-Start-up service currently has 8 full- and part-time employees who undertake entrepreneurship education, related marketing activities to raise awareness and mobilise, idea and technology scouting and entrepreneur support. The staff itself is supported by an extensive network of partners. Among these are the neudeli start-up centre at the Bauhaus-Universität Weimar, the STIFT foundation for technology, innovation and research in Thuringia, the ThürInG Thuringian network for innovative start-ups, the TIP Technology

and Innovation Park Jena, the ThüBAN Thuringian Business Angel Netzwerk and the Denkfabrik enterprise university, a collaboration of all enterprise universities in Germany funded or supported through EXIST. In addition to the dialogue with these partners, the K1-Gründerservice also has intensive contact with Jena council, the city's mayor and the business development agency (Wirtschaftsförderungsgesellschaft Jena mbH).

Achievements

The level of awareness and acceptance of the service centre and K1-Start-up service continues to rise thanks to its marketing activities and its awareness-raising and information events. The centre's reputation is reflected in the growing numbers of requests for consultations from potential entrepreneurs. The numbers of participants in seminars and talks is also increasing. Evaluations of the courses also confirm this positive trend. These developments are accompanied by a rising number of start-up ideas brought forward by students but which are not directly based on university research. Entrepreneurship is increasingly seen as an alternative career. In addition, the pool of advisors was expanded to add teaching and advisory expertise in areas where there had been gaps.

Evolution of the programme

Support for entrepreneurs has existed at Friedrich Schiller University Jena since 1999. Transfer activities have been supported by various BMWi programmes since then and the objective of the current funding phase (EXIST IV) is to achieve economic independence of third-party funds. To achieve this, a range of fee-based development courses and an MBA programme have been developed which are now offered and are intended to finance entrepreneurship support over the medium-term. The senior administration of the university supports the consolidation of these developments, not least by agreeing appropriate objectives with the Free State of Thuringia.

Success factors

The successful implementation of these measures is rooted in the merging of enterprise support, copyright matters and research transfer into one centralised institution. Researchers and those with ideas of potential transfers come into contact with staff from the transfer centre at a very early stage, and this helps the project development and builds trust between the advisors and the advised. A centralised computer-based database of all externally funded projects also assists the screening of projects with application potential.

Challenges

It is increasingly necessary to become independent of third-party, external funding in order to avoid the drawbacks of temporary project-based funding. The development and establishment of an economically viable enterprise support system by marketing fee-based training and development activities to businesses in the region, is nonetheless a major challenge. The viability of the concept will be shown in practice.

THE ENTERPRISE CENTRE (GRÜNDUNGSZENTRUM) AT EBERSWALDE UNIVERSITY FOR SUSTAINABLE DEVELOPMENT, GERMANY

Rationale and nature of the programme

The enterprise centre (GründungsZentrum) is the central institution for entrepreneurship and self-employment at Eberswalde University for Sustainable Development (HNEE). It co-ordinates the project Gründungs-Standortmanagement ("enterprise location management"), which funded by the European Regional Development Fund (ERDF), and the BIEM-Start-up-Navigator, which is funded by the European Social Fund (ESF). The founding principle of the GründungsZentrum is to promote entrepreneurship.

The task of location management is to raise awareness of enterprise, to make the GründungsZentrum and its services at the HNEE better known, to provide information about funding options for business start-up, and to connect entrepreneurs with suitable funding programmes. A further task is to support networking, both internally and externally, always with the goal of promoting entrepreneurship in the region. BIEM-Start-up-Navigator supports potential entrepreneurs in workshops, in which entrepreneurship-relevant information is provided along with qualified advice and consulting.

Activities

The services offered by the GründungsZentrum are advertised throughout HNEE through marketing activities such as profiles of entrepreneur alumni on the website and in events; visibility in HNEE publications and the local press; presence at university events; info-mails; communication through partners (lecturers, co-operation partners, student representative bodies and initiatives); presentations in degree programmes.

Potential entrepreneurs are offered free orientation sessions and first consultations on funding programmes that can assist them to start self-employment and are passed on if they are suitable. All of the consultations are carried out on an individual basis that takes personal circumstances into account. There is a media centre in the GründungsZentrum where potential entrepreneurs can find information on funding options.

The GründungsZentrum regularly offers workshops that extend over several days and give potential entrepreneurs the chance to acquire enterprise-relevant knowledge and skills, and test and consolidate their ideas. The workshops are run by experienced enterprise consultants and cover topics such as developing an idea to a business model, writing business plans, and general legal and tax-related matters. The workshops give the same emphasis to knowledge and methods so that the participants are then in a position to ex-

amine their idea(s) critically, recognise problems and find solutions to them. After the workshops, the entrepreneurs are paired with experienced entrepreneurship consultants and industry experts who give them individual support in preparing their enterprise.

Resources

The GründungsZentrum is financed by the ESF, ERDF and state funds. It has existed since 2008 and has generally been staffed by 2 members of staff working 20 hours a week.

The GründungsZentrum is partnered by BIEM e.V., the Brandenburg Institute for Entrepreneurship and SMEs, the joint institute run by the 9 universities in the state of Brandenburg together with, the state's Brandenburg development agency (ZukunftsAgentur Brandenburg). BIEM promotes entrepreneurship originating at universities and research institutes, and works to foster entrepreneurship in SMEs.

Achievements

Entrepreneurship has been a permanent component in teaching at HNEE since 2008 and 64 potential entrepreneurs have taken part in the enterprise workshops since 2011. To date, 23 new businesses have resulted. Moreover, the enterprise centre has helped establish a culture of enterprise at HNEE, i.e. self-employment is increasingly seen as an alternative career option.

Evolution of the programme

Changes in the labour market have resulted in self-employment being increasingly viewed as a possible career for members of HNEE, particularly students. HNEE recognised these developments and in 2004 began to introduce entrepreneurship education into its curricula, including a series of seminars on enterprise management. These seminars were attended primarily by students from the Business Management programme; students in other subject areas were less open to entrepreneurship and so it was decided that further steps were needed to promote the idea of entrepreneurship in all the faculties.

The objectives of these steps were to improve the enterprise climate at HNEE and its environment; to raise awareness of entrepreneurship; to increase enterprise motivation; and to extend entrepreneur-

ial skills among students, graduates, members of staff and professors. The GründungsZentrum was set up (originally as the Gründerzentrum) in 2008 as a central institution at the university tasked with pursuing these goals.

In its first year, the project was given a strategic focus and began with the conception and implementation of course on establishing a business, which was open to all students in all HNEE programmes. The implementation was extended in 2009 and the course was offered once per year. Also in the first year, entrepreneurship workshops were developed and offered. These were also expanded and held 4 times per year.

Immediately after it was set up, the GründungsZentrum began to undertake comprehensive marketing activities, including promoting itself to relevant university bodies, designing and producing marketing materials, creating and maintaining an Internet site, email communication, etc.

The GründungsZentrum has since been integrated into the BIEM network, which ensures that it participates in a Brandenburg-wide exchange of information and experiences between university enterprise centres. At the end of 2011, responsibility for the GründungsZentrum was given to the Vice President for Study and Teaching in order to underline its position within the university as a central institution.

Success factors

The combination of individual, university-specific, free advice with effective communication and marketing at HNEE is what makes the programme successful. For example, events listings are used to make people aware of events offered by the GründungsZentrum, which in turn raises the profile and thus the utilisation of the service (measured in terms of numbers of orientation meetings). Secure EU funding is a decisive success factor in the realisation of the programme as it could not have been financed from university or state resources alone.

Challenges

The greatest challenge is to extend financing for the GründungsZentrum beyond the current project funding phase (2011-2013). Another challenge is to overcome the attitude of clients at HNEE that entrepreneurship and sustainability are not compatible. Current developments on the labour market and budget cuts for enterprise support by the state have resulted in enterprise figures declining in the region in 2012. There are as yet no signs of a turnaround so activities that are designed to motivate entrepreneurship and expand entrepreneurial skills must be intensified.

GOOD PRACTICES:
**STRENGTHENING
ENTREPRENEURSHIP
EDUCATION**

MASTER'S OF SCIENCE IN STRATEGIC ENTREPRENEURSHIP AT JÖNKÖPING INTERNATIONAL BUSINESS SCHOOL, SWEDEN

Rationale and nature of programme

Since its inception in 1994, Jönköping International Business School (JIBS) has focused on Entrepreneurship as one of its core areas in research and education. The Master's of Science (MSc) programme in Strategic Entrepreneurship was launched in 2006 and it aims to help students improve their entrepreneurial effectiveness, both for creating and launching new start-ups and for identifying and developing opportunities in existing organisations to help them unleash their growth potential. Building on state-of-the-art research results as well as on practical projects and start-up experiences, this programme prepares students to conduct entrepreneurial activities in different settings.

Activities

The programme is offered as a one-year (60 ECTS credits) or two-year (120 ECTS credits) degree and focuses on conveying an entrepreneurial mind-set and associated action-orientation. The one-year programme includes the core courses Entrepreneurship: Person and Process, Entrepreneurial Growth, Creating a New Venture, Corporate Entrepreneurship and Strategic Renewal, Advanced Research Methods, and Entrepreneurial Finance, as well as a final thesis worth 15 ECTS credits. The two-year programme allows for a semester abroad at one of 200 international partner universities or a choice of elective courses, such as an

Internship in Entrepreneurship, in which students can work with their own ventures or in an entrepreneurial organisation combined with writing reflections about that work, individually coached by the examining teacher. For the two-year programme, a 30 ECTS-credits master's thesis is written. Approximately 50 students are admitted each year, typically representing at least 20 different nationalities.

A MSc programme in entrepreneurship necessarily faces the challenge of being situated between entrepreneurship as an academic field and entrepreneurship as a practice. Thus, such a programme needs to combine learning about strategic entrepreneurship in the form of academic, theoretical contents (albeit applicable to practice) with learning for entrepreneurship. However, even more fundamental is to offer training in entrepreneurship that includes practical experimenting with entrepreneurial activities to develop the necessary skills and mind-set and identity work that aims at crafting an entrepreneurial self.

The international setting of the programme allows students to develop a diverse and international network of contacts to draw on in their later careers – one factor known to contribute to entrepreneurial success. By enforcing the students' (intercultural) team-working skills through assignments that bridge between the university and the (business) community these networking capabilities are further advanced. Through guest lectures by mem-

bers of the Swedish business community, through projects with Swedish organizations, and through spaces provided to students to develop and enact their own venture ideas, students have the chance to get acquainted with the Swedish institutional and business landscapes, thereby experiencing the "glocal" interplay between the local and global business dimensions.

Resources

The programme is funded through standard payments by the Swedish government to JIBS for full-time students from Sweden and the EU. Non-European students pay tuition, which generate extra funding to the programme. The programme is co-ordinated by a Programme Manager, who co-operates with all professors, teachers and students involved in the programme. Selected students act as Programme Developers and through regular meetings provide important feedback for ensuring the quality of the programme. A Programme Advisory Board comprises teachers, students, alumni, and practitioners and meets annually to discuss the further strategic development and content coverage of the programme.

The local incubator Science Park is an important partner in delivering the programme as their consultants deliver workshops for students, e.g. on

entrepreneurial creativity and identifying venture ideas. They also participate in evaluating entrepreneurial projects and provide further support for developing students' venture ideas. Around 30 new ventures are started by JIBS students at the Science Park each year.

Achievements

The programme was awarded with the international EPAS accreditation in 2011. For EPAS accreditation, EFMD assesses programmes along the following criteria: (1) the institutional, national and international environment, (2) programme design, (3) programme delivery, (4) programme outcomes, and (5) quality assurance. They particularly emphasise achievements in the areas of academic rigour, practical relevance and internationalization.

According to the Swedish Association of Graduates in Business Administration and Economics 2010 survey, 97.7% of JIBS graduates obtained jobs within six months of graduation (including PhD positions). Graduates of this programme work in a variety of different positions and industries, with three clear focus areas, namely starting an own venture, working with entrepreneurship-related consulting activities, and pursuing PhD studies. About 1/3 of the graduates do not return to their home countries or stay in Sweden, but make use of their international experience by working in third countries.

Evolution of the programme

As part of the conversion to the Bologna system, JIBS adapted the ECTS grading scale and switched to a system of 3-year bachelor plus 2-year master education to facilitate further internationalization. A portfolio of 2-year master programmes was developed, including the Master's of Entrepreneurial Management. It was launched in 2006 and later renamed to Innovation and Business Creation and then to Strategic Entrepreneurship. During the first three years of the programme (2006-2008), a compulsory introductory course in Business Development and Growth (later renamed to "Innovation and Business Creation") worth 15 ECTS credits provided a basic understanding for the programme's many perspectives on business development. In 2009, this course was transformed into a 7.5 ECTS credits course "Introduction to Business Creation", which had a clearer focus on entrepreneuring as an individual and organisational phenomenon. The reason for this change was the difficulty of delivering a course consisting of eight different thematic modules in a cohesive way rather than appearing as a notice-board for the many research interests of the faculty. In order to further stress the entrepreneuring aspect, the course is now called "Entrepreneuring: Person and Process".

Success factors

One success factor are the committed senior faculty members delivering the education, who all have a strong research background in relevant subjects, while taking care to maintain practical relevance. Their regular meetings ensure progression and the continuous development of the programme's contents and delivery modes. Another success factor is the highly diverse and international student body, which leads to extensive intercultural learning opportunities.

Challenges

The key challenge in running this programme is to strike a balance between academic rigor and practical relevance. Many people expect a programme focusing on entrepreneurship to be rather vocational, while a MSc degree naturally demands academic depth. Governmental requirements in Sweden stipulate that master's theses must make a theoretical contribution. Thus, the writing of business plans, common in many other entrepreneurship programmes, is not a viable option for replacing the thesis.

SMILE (SELBST MANAGEMENT INITIATIVE LEIPZIG) AT THE UNIVERSITY OF LEIPZIG, GERMANY

Rationale and nature of the programme

Since August 2006, the SMILE (Selbst Management Initiative Leipzig) has been working to establish the entrepreneurial spirit at Leipzig's universities and research institutes. SMILE is a co-operation project between the universities and research institutes in Leipzig, and is funded by the European Social Fund and the Free State of Saxony.

SMILE arranges seminars, workshops and one-off events in which participants are given the opportunity to find out about, to develop and to fulfil themselves. Students, graduates and academic personnel at Leipzig's institutes of higher education who have entrepreneurial ambitions receive support in the form of individual, comprehensive coaching sessions on various aspects of the pre-start-up phase. Their business ideas are analysed, developed and accompanied through to their realisation. The focus of the programme's activities is on the personality and goals of the individual, who are encouraged and prepared for a life of self-employment and lifelong learning. Participants learn key skills and information and discover how to apply them as the basis of personal autonomy, whereby the individual's own potentials and capabilities are identified and promoted in the long-term. Between 800 and 1000 participants take part in approximately 80 activities of different types each semester. The ratio of men to women is virtually equal.

Activities

SMILE has a modular project structure. The modules build on each other and include activities to raise awareness and scout for ideas that awaken and focus the participants' interest in entrepreneurship. These are paired with activities expanding skills and teaching the key capacities needed by potential entrepreneurs with a concrete interest in setting up their own business. The core of entrepreneur coaching and team-building activities is formed by specialist coaching sessions for individuals and small groups designed to aid and assist the realisation and implementation of individual plans. The network has a broad base and is open to entrepreneurs in all branches of industry. The range of activities offered also includes a specialist module called SMILE.medibiz which is designed especially for the biotech and life sciences cluster in the Leipzig region.

The activities offered by the entrepreneur initiative have three main centres of focus: recognising + discovering potentials and aptitudes; expanding + developing potentials and aptitudes; realising + using potentials and aptitudes. Participation in all SMILE activities is on a voluntary basis and according to personal interest. Most events and workshops do not require prior knowledge or experience and can be joined at any time.

Resources

SMILE is a co-operation project involving the following universities, colleges and research institutes in Leipzig: University of Leipzig, Leipzig University of Applied Sciences, HHL Graduate School of Management, AKAD Hochschule Leipzig and the Helmholtz Centre for Environmental Research. The initiative has offices in 8 locations throughout Leipzig.

The SMILE team is composed of 13 specialists who come from different backgrounds, giving the team expertise in a well-rounded range of areas. The initiative is involved in co-operations and regular joint activities not just within the participating universities and research institutes but also with academic partners, technology transfer centres, the private sector (banks, venture capitalists) and regional interest groups beyond the immediate SMILE network.

With funding from the European Social Fund and Saxony's State Ministry for Economic Affairs, Labour and Transport, and the Ministry for Higher Education, Research and the Arts, participation in SMILE's activities is free of charge.

Achievements

Approximately 5900 individual participants have passed through the initiative since its inception in 2006. Approximately 12 000 registrations for its activities in all make SMILE one of the most successful initiatives at the University of Leipzig.

120 businesses have grown out of the business ideas that the project has worked with, while more than 170 freelancers have been supported on their path towards self-employment. The real number of business start-ups among freelancers is in fact higher as not every entrepreneur needs support right through to registering their business.

Recently, the specialised module SMILE.medibiz dedicated to entrepreneurship in biotech and life sciences has seen 35 technology-oriented businesses established offering innovative services and products. SMILE entrepreneur teams have raised more than EUR 15 million in funding and equity.

Evolution of the programme

The SMILE project was created in spring 2006 and has been bringing students, graduates and academic staff together in an interdisciplinary, intercultural and creative forum, and supporting their entrepreneurial ideas and ambitions since then. The project started as a co-operation between the University of Leipzig and HHL Graduate School of Management but has grown considerably in size and scope. Not only was additional funding secured, but the specialist SMILE.medibiz module was started, and additional partners in the region joined the network, including Leipzig University of Applied Sciences, AKAD Hochschule Leipzig and the Helmholtz Centre for Environmental Research.

The LifeScience Entrepreneurship Office opened in 2011 with support from the University of Leipzig; the office bundles the technology-based incubator activities involving SMILE's enterprise coaches together with the technology transfer activities undertaken by the University of Leipzig's Centre for Biotechnology and Biomedicine. This co-operation also makes working space available to the entrepreneur teams during the start-up phase of their business.

Co-operation with application-oriented research institutes in Leipzig has deepened. These include the Fraunhofer Institute for Cell Therapy and Immunology, the Translational Centre for Regenerative Medicine and the Innovation Centre for Computer Assisted Surgery, as well as the Centre for Biotechnology and Biomedicine and the Helmholtz Centre for Environmental Research previously mentioned.

Another area of focus in the region is on enterprise in the culture and creative industries. As a result, co-operations have been developed with the Leipzig Creative Industries Network, the Leipzig Academy of Visual Arts (HGB) and the University of Music and Theatre Leipzig.

Success factors

The SMILE Entrepreneurship programme places the learner at the centre of its activities and takes that as its starting point. The particular emphasis is on discovering the talents within the individual and developing them. SMILE is about helping young people to discover themselves and to make decisions regarding their lives.

SMILE activities are rooted in the current challenges in the organisation of education and training, and they focus on the productive application of knowledge. SMILE offers its participants a learning environment which puts them in a position to decide what and how they want to learn. There is deliberately little teaching of "pure" knowledge; the goal instead is to put the personality of each participant at the focal point, to strengthen, develop and prepare it for life. At the heart of the events and learning principles lies a social-constructionist approach which forms the basis of all SMILE's entrepreneurship activities.

CENTRE FOR INNOVATION AND ENTREPRENEURSHIP AT ERNST-ABBE-FACHHOCHSCHULE JENA, GERMANY

Rationale and nature of the programme

Anybody who wants to shape their life according to their own design, who wants to realise their own ideas or intends to set up their own business will find the perfect partner in the Centre for Innovation and Entrepreneurship (CIE) at Ernst-Abbe-Fachhochschule Jena (EAH Jena). CIE provides an environment in which students can discover their entrepreneurial skills and capabilities, and expand and put them into action. CIE offers expert advice, needs-oriented qualification and contacts as young people make the journey towards their vision of professional independence.

CIE is a pool of expertise comprising several professors and research assistants bringing together all the entrepreneurship-related activities at EAH Jena. The support it enjoys from senior management of the university together with its interdisciplinary co-operation and the close collaboration with actors outside the university mean that CIE provides an excellent atmosphere for entrepreneurship. Its activities are directed mostly at students, (recent) graduates and staff at EAH Jena, but can be made available to outsiders under certain circumstances.

Activities

Activities in the sphere of entrepreneurship education are under the overall direction of the department of Business Administration, with the main focus being on teaching entrepreneurial skills. On the one hand, students are made aware of the option of starting and running their own business while, on the other, they learn the knowledge and skills needed to make it successful. The education is based on enhancing the specialist, methodological and social skills widely seen as key to successful entrepreneurship. The courses are integrated into the curricula of the Bachelor and Master's programmes at EAH Jena and cover topics such as business start-up, entrepreneurs and entrepreneurship, entrepreneurial thinking, negotiation and presentation skills, steps towards self-employment, product development and marketing, and – last but not least – various business plan games.

All options for initial contact and advice for potential entrepreneurs are gathered together in the EAH Jena's Gründerservice, which is a part of CIE. The advisory service focuses on aspects such as financing, marketing, sales, business models and copyright. Identification of and assistance in applying for specific funding is another central component. The Gründerservice also acts as an interface between partners inside and outside EAH Jena and provides contacts between co-founders, professors and investors, etc. Additionally, the

Gründerservice provides assistance to recently founded companies intending to participate in trade fairs and recruiting events, for example, and helps with infrastructure.

Research activities also take place at CIE, centring on entrepreneurship education, academic spin-offs, knowledge and technology transfer and innovation management. The common element in these activities is the analysis of factors contributing to the success and continued growth of innovative new companies. Results of research are regularly published in various international specialist journals and presented at conferences. CIE also publishes the Jenaer Schriftenreihe zum Innovations- und Gründungsmanagement, a series of monographs on innovation and entrepreneurship management.

Resources

CIE was financed entirely from external sources until 2009, whereby funds from the EXIST – Existenzgründungen aus der Wissenschaft programme of the Federal Ministry for Education and Research were a particularly significant component. Two permanent half-time positions paid for from EAH Jena's own personnel budget have allowed CIE's activities to have some stability in the long-term. These staff members, who form the core team along with the head of CIE, are primarily tasked with teaching but also undertake administrative and advisory activities. CIE is currently par-

ticipating in 2 externally funded projects that have brought in 3 additional staff members. A number of students also contribute to CIE as student assistants or young academics.

Achievements

Approximately 15 to 20 entrepreneurial education courses have been offered every year since 2011. This amounts to about 30 contact hours per half year or semester. Based on an average of 15 students per course, this means that the courses have around 250 participants a year, whereby many students participate in several courses. It is estimated that CIE's courses reach at least 20% of all students at EAH Jena. CIE advised and consulted on a total of 42 entrepreneurship projects in 2011 and 2012; in the same period, 14 companies were started by the entrepreneurs who had received advice and coaching from CIE.

Evolution of the programme

Promoting entrepreneurship and the establishment of businesses has been a matter of great importance at EAH Jena for more than 15 years. EAH Jena was one of the initiators of the GET-UP network in Thuringia and has realised a number of research and collaborative projects promoting entrepreneurship since 1998. The Federal Ministry for Education and Research's EXIST programme contributed to the creation of a wide range of measures promoting entrepreneurship. CIE itself was established in 2004 as the Centre of Entrepreneurship before refocusing in 2011, giving the aspects of creative and innovative action a greater emphasis.

Success factors

CIE and entrepreneurship-related activities are integrated into local, regional, national and international networks. Local-level involvement includes, for example, co-operation with Friedrich Schiller University Jena, Technology and Innovation Park Jena GmbH, BioCentiv GmbH, INNOMAN GmbH and many other start-ups and established businesses. Gründernetzwerk Jena also organises workshops and meetings on a regular basis to promote the exchange of information and experience.

Challenges

Challenges currently faced consist of initiating new research and externally-funded projects in order to be able to continue to develop CIE's many activities given tight public budgets. There is great potential to exploit even closer collaborations with self-employed EAH Jena graduates and by offering services available for a fee, such as skills development events or specific coaching programmes.

INTERDISCIPLINARY ACTION-ORIENTED ENTREPRENEURIAL QUALIFICATION AT THE FREIE UNIVERSITÄT BERLIN, GERMANY

Rationale and nature of programme

As part of the reforms introduced by the Bologna Process, the Freie Universität Berlin (FUB) introduced general professional skills courses (Allgemeine Berufsvorbereitung, ABV) which form the basis upon which key interdisciplinary entrepreneurship skills are learned. The Funpreneur competition and BusinessplanLab modules were developed by FUB's "profund" start-up development office in co-operation with the Department of Information Systems in the School of Business and Economics. A particular focus is on interdisciplinary co-operation throughout the university. Every bachelor's degree programme includes a requirement to take part in ABV courses to gain 5 credit points.

The Funpreneur competition gives students the opportunity to try operating as an entrepreneur for a period of time in a risk-free but realistic environment, to experience a sense of achievement and to overcome their fear of failure. The students receive the degree of support that they need. In BusinessplanLab, the students develop a business plan and enter into the external BPW Berlin-Brandenburg Business Plan Competition.

In addition, "profund" also offers various other extra-curricular activities for students, graduates and academics already considering entrepreneurship. These range in length from a 2-day general introduction via a 1-week Entrepreneurship School to a semester-long series of events entitled "Student Start-up Programme". Although not described in detailed here, these events are also action-oriented, practice-focused and interdisciplinary.

The entrepreneurial qualification programme at FU Berlin and Charité – Universitätsmedizin university hospital will be significantly expanded further within the coming five-year funding phase (5/2013 to 4/2018) in the EXIST-Gründungskultur programme. The spotlight is on developing qualification formats that meet the needs of students, graduates and academics in every department and incorporating them into a modular structure that will also include e-learning elements.

Activities

Participants in BusinessplanLab draw up their business model at the beginning of the winter semester and find out how a business plan is structured. Well-known guests from the start-up scene are invited to give presentations and participate in discussions. During the course of the semester, the participants are coached to transform their business idea into their own business plan; this process takes place in parallel to the Berlin-Brandenburg Business Plan Competition, and the plans are entered in the BPW study category. The two best teams also represent their department in a university-wide competition. In the process, the students learn how to present a business idea to a non-expert public concisely and comprehensibly.

The Funpreneur competition takes place every semester and begins with a 2-day ideas workshop. Condensed courses then present the essential fundamentals of project management, marketing, sales and distribution, and law. At the same time, the "Funpreneurs" work in teams to establish a temporary company, receiving EUR 5 start-up capital and developing their products or services before launching them onto the market 5 weeks later. The students receive expert mentoring from entrepreneurs and managers with experience of Berlin's business world. At the end of the semester, the students write a final report and present

their results with a trade fair-type stand and stage presentation to a jury and the public at large at a closing event. The 3 best teams win prize money totalling EUR 2500, which is donated by the sponsors. In addition, the best stand presentation receives an award voted for by the public and a press award goes to the team with the best PR.

Resources

In addition to financial resources provided by the Freie Universität Berlin itself, the entrepreneurial qualification programme receives a great deal of support from the private sector – without surrendering the independence of its teaching in return. Berliner Bank has been the main sponsor since 2008, supporting the Funpreneur competition. IHK Berlin has been a partner since 2008 and provides facilities for the closing event free of charge. The patron of the competition is Eric Schweitzer, President of IHK Berlin and the Association of German Chambers of Commerce and Industry DIHK. The majority of the mentors are members of Wirtschaftsjunioren Berlin e.V., an association of young entrepreneurs, and participate on a voluntary basis. All of the partners are represented with a seat on the jury. Sponsors are currently being sought for BusinessplanLab.

A member of the “profund” staff organises all the above-mentioned curricular and extra-curricular activities. Publicity material and seminar materials, such as invitations to the closing event and a catalogue including all the projects undertaken in the semester, are put together by a student assistant.

Achievements

Between 2006 and the end of 2012, more than 650 students took part in the Funpreneur competition and a good 240 participated in BusinessLab.

A large number of these participants have remained in contact with the topic of entrepreneurship as they prepare for a career as company founders: they do internships with business mentors and start-ups, take part in other qualification seminars and courses, and attend “profund” events like the “Business & Beer” meeting of start-ups and entrepreneurs. Every year, approximately 30 participants in the qualification courses make appointments with “profund” to talk about their start-up plans. A total of 8 companies founded with support from “profund” either by participants during their studies building on their original idea or with a new business concept were still active at the end of 2012. The programme’s objective is to mobilize students in all departments and subject areas, and in the past 2 years students from over 50 different disciplines have taken part – ranging from Arabic Studies to Geography to Veterinary Medicine.

Success factors

In order to reach students in every discipline, the modules were conceived as action-oriented and linked to practical experience, and were integrated as an attractive feature in the ABV course programme. The programme communicates the message that everyone can take part and experiment with being an entrepreneur; it is not only for inventors, business graduates and programmers. A motivating factor is also the opportunity for students to realise their own ideas. They learn that an interest in art and design can be developed into a business idea, as can a passion for cooking. Many students have an idealistic element in their business idea, such as producing clothing from recycled sources or shelves from waste wood. The result is that subject-specific barriers are broken down and the positive experience compensates for the additional time spent.

One of the success factors from the organisational point of view is undoubtedly the long-term, active involvement of sponsors and honorary partners. Their participation brings business expertise into the university from outside while the money raised by sponsoring ensures continuity and the professional appearance of the programme. As a result, the Funpreneur competition has become known beyond Berlin.

HTW GRÜNDUNGSSCHMIEDE AT HOCHSCHULE FÜR TECHNIK UND WIRTSCHAFT DRESDEN, GERMANY

Rationale and nature of programme

HTW Dresden (Dresden University of Applied Sciences) has had an incubator for start-ups for more than 10 years. Students, graduates and academic staff from across HTW Dresden who are interested in starting their own business can come to the Gründungsschmiede and find answers to questions that they have with regard to their ambition. The incubator offers them access to workspaces including all necessary resources (telephone, computer, internet, office equipment) free of charge for a maximum of two years. Also included in membership of the Gründungsschmiede is use of HTW Dresden's infrastructure such as laboratories and library.

HTW Gründungsschmiede is a partner in the dresden|exists, a network of start-ups funded by the Free State of Saxony and the European Social Fund based at the TU Dresden. dresden|exists has been actively encouraging enterprise culture for over 10 years with the goal of showing students and academics that entrepreneurship and self-employment can be an attractive alternative.

The programme offered gives students at HTW Dresden the opportunity to attend various lectures that deal with the topic of entrepreneurship and to earn credit points.

Activities

ACTIVITIES AT HTW DRESDEN: Business students can select a specialisation module on founding and managing SMEs as part of their degree programme. The course deals with the tax, legal, financial and general aspects of setting up a company. A business plan seminar is open to students in all subjects and puts the participants into interdisciplinary teams which then produce a business plan on the basis of genuine business ideas (of the students' own). A series of lectures entitled "Gründungsorientierte Einführung in die BWL" gives a broad overview of the fundamentals of business administration with a focus on the major topics relevant to entrepreneurs. Lectures designed to raise awareness of entrepreneurship among students in the various faculties are also held on a regular basis; the content is tailored according to the specific subject area. Once a year, the members of the Gründungsschmiede invite their sponsors from HTW Dresden, network partners and other potential entrepreneurs to a breakfast where experience and advice can be exchanged.

ACTIVITIES CONNECTED TO DRESDEN|EXISTS:

Participation in the numerous activities run by dresden|exists is open entrepreneur teams mentored at HTW, who learn the basic knowledge needed to found and run a business on the one hand and receive personal development training for entrepreneurs on the other. Events and regular meetings give entrepreneurs the opportunity to meet and exchange experience with other entrepreneurs, experts and successful business people.

PROVISION OF WORKSPACE AND INFRASTRUCTURE:

HTW Gründungsschmiede gives students, graduates and academic members of staff interested in starting their own business the opportunity to use workspaces including all necessary resources (telephone, computer, internet, office equipment) free of charge for a maximum of two years. Also included in membership of the Gründungsschmiede is use of HTW Dresden's infrastructure such as laboratories and library. The Gründungsschmiede offers entrepreneurs advice and assistance in putting together and refining a business idea not just during the start-up phase, it also helps make contacts between the entrepreneurs and the market and research institutions, provides assistance in the search for funding and finally makes its large network of experts and partners available.

Resources

FINANCIAL RESOURCES: A co-operation agreement is in place between HTW Dresden and dresden|exists which guarantees that events, lectures and consulting sessions on entrepreneurship can take place. dresden|exists is a project funded by the Free State of Saxony and the European Social Fund. HTW Dresden provides 10 rooms including infrastructure (e.g. PC, telephone, internet) free of charge for start-ups.

HUMAN RESOURCES: One person is currently employed full-time at HTW Dresden to administer the lectures and events; this person also offers advice and consulting, and assists the entrepreneurs in the incubator. A student assistant is also employed for 30 hours/month. In addition, a professor is available to potential entrepreneurs and teams in the HTW Gründungsschmiede for 20 hours per month for consulting and coaching.

PARTNERSHIPS: Close relationships exist between the Gründungsschmiede, the Faculty for Business Administration, the Career Service and relevant administration offices at HTW Dresden. All of the members of the Gründungsschmiede have access to all of the faculties, departments and institutes at the university. HTW Dresden is a member of the HAWtech alliance of applied sciences. There are meetings once a year with colleagues from the member universities to exchange ideas about entrepreneurship education and awareness raising. HTW Gründungsschmiede is a partner in the

dresden|exists entrepreneurship network and also maintain a large network of contacts with various funding and advisory partners, associations and local business.

Achievements

HTW Dresden is one of the top-ranked universities of applied sciences in Germany in terms of entrepreneurship activities. For more than ten years, business ideas have been being initiated, discussed, solidified, developed and assessed for their commercial potential in HTW's Gründungsschmiede. Since its creation, the programme has monitored and mentored more than 200 start-up projects originating in the different faculties at HTW Dresden. Several of the entrepreneurs have taken part in competitions (e.g. IKT Innovativ, futureSAX, red dot design award, Saxon Staatspreis für Design) and have won awards. Many of the teams that received coaching have also been successful in attracting funding.

Evolution of the programme

HTW Gründungsschmiede has existed as a central, inter-faculty point of contact for questions relating to entrepreneurship for over 10 years. At the beginning, the Gründungsschmiede had very little space available and the consulting an advice on offer was restricted due to its limited personnel. Since 2009, however, the Gründungsschmiede has had one full-time member of staff who cov-

ers the lectures and seminars, and the number of consulting hours and coaching sessions has been increased. Since May 2010, the Gründungsschmiede has been housed in newer and larger facilities, which means that workspace for up to 11 entrepreneur teams can be provided, depending on the size of the team.

Events on entrepreneurship have been held every semester for 10 years; students can gain credits or a certificate of participation.

The programme has been working closely with HTW's Career Service for 3 years, i.e. announcing and publicizing each other's activities and organising joint events aimed at helping students find the right career for them.

Success factors

HTW Dresden is the only university in Saxony with its own incubator. An important contributor to the success of the Gründungsschmiede is the commitment of the university's senior management to it. This means that potential entrepreneurs at the university can be provided with a workspace free-of-charge. The advantage of the spatial proximity is that it also gives the entrepreneurs the chance to communicate easily and support each other. A coach is also always available for consultation. Another important factor is the close collaboration with individual faculties, departments and institutions at HTW Dresden.

START-UP SUMMER SCHOOL AS PART OF ENTERPRISE SUPPORT AT HOCHSCHULE FÜR TECHNIK UND WIRTSCHAFT BERLIN (HTW BERLIN), GERMANY

Rationale and nature of the programme

Enterprise support has been supplementing the university education at HTW Berlin since 2001 and is designed to prepare interested students for self-employment. As the organising service provider at HTW Berlin, the Competence Centre for Start-ups and Young Entrepreneurs offers a range of consulting, training and information events that are open free-of-charge to students, graduates and members of staff at HTW Berlin. One of the features of the programme of events since 2008 has been the 4-week Start-up Summer School offering a large number of business-oriented workshops and seminars. A total of 274 people, 55% of them women, participated in 72 events between 2008 and 2012.

Activities

The programme of the 4-week Summer School contains a mixture of analysis, active learning, role playing and games, team work, presentations, learning and application of techniques and methods, and talks on knowledge transfer. Modules that are featured every year are entrepreneurial assessment, a seminar on idea generation and evaluation, a business plan workshop, a start-up plan game, and sales training. These are supplemented by seminars on bookkeeping, law, social security and tax. In addition, seminars are offered on time- and conflict-management, team building, strategy development, and funding options. The programme is rounded out with individualised start-up consultation. The team at the Competence Centre for Start-ups is responsible for drawing up the programme, recruiting course leaders and participants, organisation, execution, consulting, evaluation and reporting.

Resources

The costs for the annual Summer School include approximately EUR 12 000 for course leader fees. On top of these come the costs of providing rooms, hand-outs and the organisation. The course leaders are professors, professional trainers, entrepreneurs and alumni.

Achievements

A survey of Summer School participants 2008-2011 showed that 34 % had established their own business. Without the Summer School, the start-up rate among HTW Berlin graduates was 10 %.

Evolution of the programme

The Summer School was held for the first time in 2008. It offered information and inspiration for potential entrepreneurs needing assistance with generating ideas, as well as for young entrepreneurs who have already set up a business and are looking for concrete information. The participants were students and graduates in cultural as well as engineering and business subjects.

As the target groups are very heterogeneous, several parallel workshops for potential and young entrepreneurs were provided for students in creative and engineering fields. Experience has shown,

however, that it makes more sense to mix the target groups as their different experience, preparation and approaches mean they can learn from each other and often answer each others' questions. The approach is in-line with the vision of promoting interdisciplinary entrepreneur teams.

Success factors

The participants in the Summer School give feedback on every topic/subject, the course leader and the overall organisation. This means that success factors can be easily identified. The courses and activities build on each other, are practice-orient-

ed and offer a mixture of different approaches to active learning. The groups are small and include a mixture of disciplines, and offer sufficient room for individual questions and an exchange of experience. The participants work on their own ideas, and so they are highly motivated and enjoy themselves. Participation is voluntary and no ECTS points are awarded. The participants appreciate receiving practical information, the learning effect regarding entrepreneurial behaviour, discovering other points of view, and finding out about their own strengths and weaknesses and those of their business idea. They can better assess the opportunities and risks of self-employment and so can make a more informed decision about whether to pursue it as a career or not. The participants also praise the organisation and profit from the network that grows out of the Summer School.

Challenges

The major challenge is to safeguard the funding for the Summer School for the near future. Until now, it has been partially funded by ESF money, and the survey of participants indicates that they are prepared to pay only a small fee that would not cover costs. With the small budget, it is difficult to recruit new high-quality course leaders to come and work for low hourly rates.

The second problem is attracting participants. The numbers are declining because students must focus on their degree programme and its courses and, secondly, because they are almost impossible to reach with traditional posters, flyers, newsletters, and/or are already overwhelmed with a flood of university publicity carrying different messages.

ANNEX 1: OECD PROJECT IN EASTERN GERMANY

This project is a case study review of entrepreneurship education and business start-up support in east German universities as part of a series of reviews on Skills and Competences for Entrepreneurship carried out by the Local Economic and Employment Development (LEED) Programme of the Organisation for Economic Co-operation and Development (OECD). This review seeks to contribute to the continuing development of entrepreneurship education and start-up support in universities and is based on international good practice criteria and assessment tools that were developed in collaboration with the European Commission.

OECD-led teams of international entrepreneurship experts visited six universities in 2011 and 2012 to conduct in-depth interviews with university rectors, professors, staff involved in start-up support activities, students and other stakeholders in the local entrepreneurship support system to learn about entrepreneurship education activities, specialised business start-up supports, universities strategies and plans. The six universities covered in the study visits were:

- ▶ University of Brandenburg
- ▶ Technical University Ilmenau
- ▶ University of Applied Sciences Schmalkalden
- ▶ University of Leipzig
- ▶ Burg Giebichenstein University
- ▶ Martin-Luther-University Halle-Wittenberg.

The findings of the case study visits were presented and discussed in a series of workshops and were complemented by an online survey of university leaders was completed in 2012 to obtain more quantitative information on university support for entrepreneurship. Case study reports were produced for the four study visits, as well as a synthesis report. All reports are available in English and German and can be found at: www.oecd.org/site/cfecpr.

The project was conducted in collaboration with the Federal Ministry of the Interior. Other key partners at the Land level included: the Ministry of Economy of Thuringia; the Ministry of Education and Research of Thuringia; the Ministry of Labour, Social Affairs, Women and Family of Brandenburg; the Ministry of Economy and European Affairs of Brandenburg; the Ministry of Science, Research and Culture of Brandenburg; the Ministry of Science and Economy of Saxony-Anhalt; the Ministry for Economic Affairs, Labour and Transport; and the Ministry of Economy, Construction and Tourism Mecklenburg-Vorpommern.

ANNEX 2: ENTREPRENEURIAL UNIVERSITY GUIDING FRAMEWORK

The OECD LEED Programme has developed a guiding framework for entrepreneurial universities in collaboration with the European Commission, DG Education and Culture. This framework is based on international case study work on university entrepreneurship support and the theoretical debate of the role of universities in generating

entrepreneurial motivations, intentions, and competences. It contains seven themes (Figure A) as well as more detailed good practice criteria under each theme. For more information, please visit: <http://www.oecd.org/site/cfecpr/EC-OECD%20Entrepreneurial%20Universities%20Framework.pdf>.

Figure A. **A Guiding Framework for Entrepreneurial Universities**



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The Organisation for Economic Co-operation and Development (OECD) is a unique forum where the governments of 34 market democracies work together to address the economic, social and governance challenges of globalisation as well as to exploit its opportunities. The OECD's way of working consists of a highly effective process that begins with data collection and analysis and moves on to collective discussion of policy, then decision making and implementation. Mutual examination by governments, multi-lateral surveillance and peer pressure to conform or reform are at the heart of the OECD's effectiveness.

Much of the material collected and analysed at the OECD is published on paper or online: from press releases and regular compilations of data and projections to one-off publications or monographs on particular issues; from economic surveys of each member country to regular reviews of education systems, science and technology policies or environmental performance. For more information on the OECD, please visit www.oecd.org/about.

LOCAL ECONOMIC AND EMPLOYMENT DEVELOPMENT (LEED) PROGRAMME

The OECD Programme on Local Economic and Employment Development (LEED) has advised governments and communities since 1982 on how to respond to economic change and tackle complex problems in a fast-changing world. Its mission is to contribute to the creation of more and better quality jobs through more effective policy implementation, innovative practices, stronger capacities and integrated strategies at the local level. LEED draws on a comparative analysis of experience from the five continents in fostering economic growth, employment and inclusion. For more information on the LEED Programme, please visit www.oecd.org/cfe/leed.



As part of the OECD LEED project on university support for entrepreneurship in eastern Germany, undertaken in collaboration with the Federal Ministry of Regional Development, this handbook presents highlights of results of a series of case studies and a university survey. The results indicate that universities promote and support entrepreneurship through teaching, extracurricular activities and numerous start-up support services. However, the universities face a number of common challenges. This handbook includes short descriptions of inspiring practices from Germany, as well as Finland, France, Poland, Sweden and the United Kingdom, that can be adapted and used to help address these challenges.