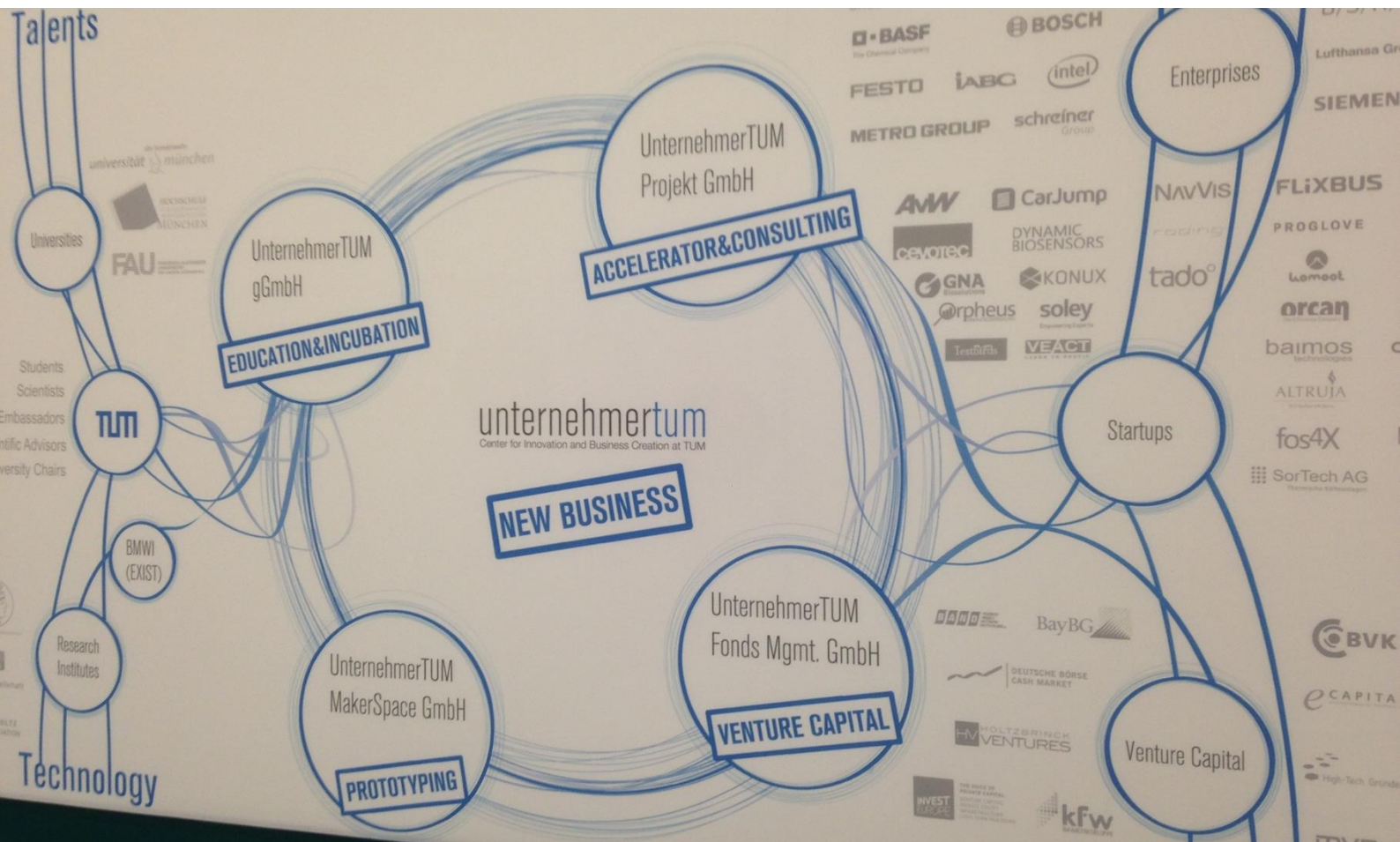


UnternehmerTUM: A full-service centre driving the entrepreneurship and innovation capacity of Germany

Munich, Germany





General Information

Title	UnternehmerTUM										
Pitch	A full-service centre driving the entrepreneurship and innovation capacity of Germany										
Organisations	UnternehmerTUM GmbH, UnternehmerTUM Projekt GmbH, Unternehmertum Venture Capital Partners GmbH, UnternehmerTUM MakerSpace GmbH, Technical University of Munich										
Country	Germany										
Author	Dr. Todd Davey (Science-to-Business Marketing Research Centre)										
Nature of interaction	<table><tr><td><input checked="" type="checkbox"/> Collaboration in R&D</td><td><input type="checkbox"/> Lifelong learning</td></tr><tr><td><input checked="" type="checkbox"/> Commercialisation of R&D results</td><td><input type="checkbox"/> Joint curriculum design and delivery</td></tr><tr><td><input type="checkbox"/> Mobility of staff</td><td><input type="checkbox"/> Mobility of students</td></tr><tr><td><input checked="" type="checkbox"/> Academic entrepreneurship</td><td><input checked="" type="checkbox"/> Student entrepreneurship</td></tr><tr><td><input checked="" type="checkbox"/> Governance</td><td><input checked="" type="checkbox"/> Shared resources</td></tr></table>	<input checked="" type="checkbox"/> Collaboration in R&D	<input type="checkbox"/> Lifelong learning	<input checked="" type="checkbox"/> Commercialisation of R&D results	<input type="checkbox"/> Joint curriculum design and delivery	<input type="checkbox"/> Mobility of staff	<input type="checkbox"/> Mobility of students	<input checked="" type="checkbox"/> Academic entrepreneurship	<input checked="" type="checkbox"/> Student entrepreneurship	<input checked="" type="checkbox"/> Governance	<input checked="" type="checkbox"/> Shared resources
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Supporting mechanism	<table><tr><td><input type="checkbox"/> Strategic</td></tr><tr><td><input checked="" type="checkbox"/> Structural</td></tr><tr><td><input checked="" type="checkbox"/> Operational</td></tr><tr><td><input checked="" type="checkbox"/> Policy</td></tr></table>	<input type="checkbox"/> Strategic	<input checked="" type="checkbox"/> Structural	<input checked="" type="checkbox"/> Operational	<input checked="" type="checkbox"/> Policy						
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Summary	<p>UnternehmerTUM (UTUM) is a leading hub for entrepreneurship and innovation in the Germany. With a well-developed set of expertise, contacts and resources it educates and supports tech entrepreneurs in all stages of creating high-growth high-tech ventures. It is a spin-off from Technische Universität (Technology University) München (TUM) and remains aligned, although external, to the university.</p> <p>UTUM combines a centre for the education of entrepreneurship and innovation, a high-tech incubator, a prototype workshop, a VC fund and an innovation consultancy under one roof. An enabler for start-ups and innovations, UTUM offers a unique network of companies, experts, talents and investors in Germany and makes a vital contribution to the start-up culture in Bavaria.</p> <p>Every year over 2000 participants take part a range of in lectures, seminars, workshop and specially designed programmes across the entire entrepreneurship process: from the idea to market entry, capitalisation and growth.</p>										



Introduction & Overview

1. BACKGROUND

UnternehmerTUM (UTUM), the Centre for Innovation and Business Creation, is an institute affiliated to the Technische Universität München (TUM) established in 2002. This process for the creation of UTUM commenced in the late 1990's at TUM with the arrival of a new university president with a vision of developing the university into an entrepreneurial university. This was the catalyst for a greater focus on and cooperation with business as well as entrepreneurship, which led to the establishment of UTUM.

Established in 2002, UTUM is the main centre for entrepreneurship, innovation and business creation at TUM. Today, the centre has 170 employees and comprises the UnternehmerTUM GmbH established in 2002 as well as its subsidiaries including UnternehmerTUM Projekt GmbH (a subsidiary focussed on projects with industry and government established in 2010), Unternehmertum Venture Capital Partners GmbH (a venture capital subsidiary) and UnternehmerTUM MakerSpace GmbH (a subsidiary that provides a facility and equipment for the practical development of products and services).

The development of UnternehmerTUM paved the way for TUM to become one of the leading university institutes for innovation and business creation in Europe. It is not just a platform for current students enrolled at TUM, it also offers opportunities for researchers, entrepreneurs, working professionals, companies and investors, as well as being an inspiration for companies from various business sectors.

2. OBJECTIVES AND MOTIVATIONS

One of the centre's main aims is to be an accelerator and hub for innovation and business creation for the university and the business environment. A vision of the management of UTUM is to provide a complete ecosystem for entrepreneurs to develop successful companies.

To fulfil this vision, UTUM **aims to develop skills and knowledge for entrepreneurship and innovation management across the entire entrepreneurial process:**

- ▶ Recognise opportunities
- ▶ Develop concepts
- ▶ Set up your business
- ▶ Ensure growth
- ▶ Executive education

From the initial idea to growth and beyond, UTUM aims to offer a suite of services to ensure that they can assist the development of an idea into a growth-oriented business, or support

entrepreneurial teams and businesses at any given stage of the entrepreneurship / innovation process.

Aligning with the different stages of the entrepreneurial process UTUM **aim to then offer a set of specifically-targeted programmes, training, workshops, consulting and events**. Curriculum-bound courses are offered to students within all faculties of TUM, which are mainly focused on developing interest, and early-stage entrepreneurship skills and knowledge. Extra-curricular programmes, workshops and competitions are also offered internally within TUM across the faculties exclusively to students, with some programmes also bringing TUM students and academics into projects with business. These programmes tend to be focussed on either developing ideas, or on developing these concepts into potential businesses. Lastly, other workshops, training programmes and incubator space are offered to all stakeholder groups. In supporting the vision of being a central hub, events are offered on the basis of stakeholders groups (e.g. student or alumni networks), on the specific need (finance) or are industry focussed (e.g. trade, energy etc.).

To achieve its vision, UTUM **aims to be ubiquitous in respect to who they assist** and therefore do not discriminate in respect to who they offer their services. While, because of their strategic and geographic connection to TUM, there is an obvious focus on students and academics from TUM, equally, UTUM increasingly offer innovation and entrepreneurship knowledge and services to businesses, business professionals and local entrepreneurs. In this respect, UTUM does not operate as an innovation and entrepreneurship arm of TUM, but instead as a hub for start-ups, big companies, students and researchers. In doing so, it becomes a central component and connector in the innovation and entrepreneurship ecosystem of Bavaria.

3. STAKEHOLDERS

UTUM is made up of:

- ▶ UnternehmerTUM gGmbH - entrepreneurship tech education and executive training, incubation, founder competitions
- ▶ UnternehmerTUM Projekt GmbH - accelerator programme TechFounders, innovation consulting and joint ventures with industry
- ▶ UnternehmerTUM Venture Capital Partners GmbH - a company providing venture capital for young technology companies.
- ▶ UnternehmerTUM MakerSpace GmbH - a high-tech prototype workshop

Founders and start-ups

Fast-acting (and reacting) new businesses are the vehicles in which new concepts make their way into the market and are the major focus of UTUM activities. Founders and start-ups are offered access to competitions, foundation consulting, Erasmus for Young Entrepreneurs, incubator with KICKSTART, team development, accelerator programme TechFounders, Executive MBA, venture capital and MakerSpace.

Students (and scientists)

Through its relationship with TUM and other research-intensive and higher education institutions, UTUM draws in student and researcher talent, research and ideas from leading sources of inspiration in its ecosystem. UTUM offers students and researchers a range of programmes including practical, hands-on entrepreneurial qualification with business plan seminars, boot camps, hackathons and idea and personal development programmes such as Manage&More.

University

UTUM offers TUM students, scientists, and start-up entrepreneurs a unique infrastructure to build their concept and their business. This includes comprehensive qualification from the initial seed of an idea to the growth phase, in a venue, which offers its services in a geographically convenient and all under one roof. Academic chairs from the TUM Entrepreneurship Research Institute round out the alliance between practical application, research and teaching.

Business

For industry partners, UnternehmerTUM acts a unique platform for cooperation with new companies and for and open expansion of their innovative activities as well as access to a quality network of key innovation actors. Business partners such the BMW Group, Bosch, Lufthansa Group, Siemens and MAN benefit from a large range of bringing them together with student, researcher and start-up companies. Companies are offered access to UTUM facilities including MakerSpace, innovation consulting, rapid prototyping, corporate acceleration, business development, idea through hackathons and joint ventures with start-ups as well as short courses, customized in-house trainings, an Executive MBA in innovation and Business Creation and access to student talent.

“I want to foster openness and collaboration between startups and BMW in order to nurture radical innovation. This is a critical success factor for both parties.” - Peter Schwarzenbauer, BMW Group

Government

The major governmental actors involved includes the Bayern State Ministry for Economics, Media, Energy and Technology (Bayerisches Staatsministerium für Wirtschaft und Medien, Energie und Technologie), Industry and Trade Council Munich (Industrie- und Handelskammern in Bayern). These stakeholders offer the regulatory framework, the funding as well as the policy focus, initiatives and momentum in which UnternehmerTUM and its partners operate.



Implementation

4. INPUTS

Since May 2015, UTUM has offered its services through a new Entrepreneurship Center at the TUM Campus in Garching, 20 minutes' train ride from the centre of Munich. The centre offers a range of different spaces for meetings, workshops and office/working space for starters and includes MakerSpace and funky café.

Funding

Funding of the programmes occurs in different ways with the majority of the activities self-funded. Activities are offered to TUM students for free. Funding is coming to 80-90% from private sources, mainly industrial clients and foundations. The residual fraction stems from public funding through regional and national governments as well as the EU.

Access to quality skills and knowledge

UTUM employs a team of experienced entrepreneurs, scientists and managers, which supports founders with the development of their products, services and business models. These experts accompany participants actively with building up their companies, market entry and financing. UTUM involve entrepreneurs as lecturers, guest speakers and facilitators as well as involving business needs in the process, which helps to make their curriculums market-oriented.

Access to UTUM Network

UnternehmerTUM has a unique network of industrial companies, industry experts, talented individuals and investors. The Munich site provides technology start-ups with an ideal environment: seven DAX companies, thousands of small and medium-sized enterprises from the high-tech industry, more than 15 universities, and a large number of other technology centres and business incubators.

5. ACTIVITIES

UTUM have developed a complete suite of activities that address each of the aforementioned stakeholders throughout the entrepreneurial process. The major activities offered by UTUM include:

TechFounders

TechFounders is an accelerator that prepares tech start-ups for their first venture capital phase and helps establish strategic collaborations. The start-ups have access to the network, expertise and resources of strong industry partners as well as the possibility to gain them as clients. In addition to initial funding of €25,000 (with no equity taken), participants get support from industry experts, company founders, investors and scientists, who serve as mentors. At

the end of the 20-week programme, the start-ups present their business idea to over 100 venture capitalists, business angels and press representatives during the Demo Day. The programme includes strong industry partners such as BMW, Bosch, Festo and Siemens, access to MakerSpace and work spaces and administrative support

Digital Hub Mobility

UTUM is a mobility hub in the Digital Hub Initiative of the German Federal Ministry for Economic Affairs and Energy, one of the first five hubs to participate in the Digital Hub Initiative of the German Federal Ministry for Economic Affairs and Energy. The Bavarian Ministry of Economic Affairs is promoting the hub with a sum of roughly 500,000 EUR.

Venture Capital

Unternehmertum Venture Capital provides venture capital for promising young technology companies in the areas of Industrial Technologies & Smart Enterprises with international market potential.

Other unique initiatives

The innovation competition “Handel im Wandel” (Trade in transformation) is another example of UTUM’s activities seeks to address the decline in retail zones over the last five years. The competition seeks ideas and concepts from retail, founder and student teams that strengthen the shopping experience in the store, use digital technologies for the purchasing process, promote cooperation between retailers, or connect online and offline shopping wisely - for new shopping experiences, lively inner cities and economic innovations. The five best start-up and innovation teams will then be supported in a 5-month intensive program to further develop their concepts, and for the best business concept there is a prize money of €10,000. The competition is run in association with the Bayern State Ministry for Economics, Media, Energy and Technology (Bayerisches Staatsministerium für Wirtschaft und Medien, Energie und Technologie), Trade Association Bavaria (Handelsverband Bayern), Industry and Trade Council Munich (Industrie- und Handelskammern in Bayern) and the RID Scholarship (RID Stiftung).

Other UTUM offerings include:

- ▶ *‘Innovative Entrepreneurs’* - is a course with credits offered within TUM to 300 students, whereby entrepreneurs tell the students about their successes and failures. This course raises the interest of students which has proven to be a great tool for fostering interest in entrepreneurship. It goes a number of steps back from having an idea, before even thinking about ideas. It is a format for German students because it doesn’t assume certain interests or understanding of entrepreneurship as you might find in other countries.
- ▶ *‘Gründerpersönlichkeit’* - is a workshop format where the focus is on personality as a potential founder, which works them through the questions of what is entrepreneurial, where do I act entrepreneurial. These are very practical sessions involving peer education, which created a wow effect and achieved high ratings.

- ▶ Industrial Projects – the programme offers students the opportunity to deepen their newly gained knowledge in the area of innovation management and to collect project management experience supported by an experienced consultant at UnternehmerTUM Projekt GmbH. As part of a Management & More team, students can help companies like BMW, Bosch or MAN design new products and services and communicate their results directly to department heads.
- ▶ E-Camp – a three-day entrepreneurial skills training, academic Doctoral students and Post-Docs from the TUM Graduate School work in interdisciplinary teams and using new technology with the aim of providing their career with some new perspectives. At E-Camp, participants are exposed to business design tools and methods in a hands-on manner to assist them to identify entrepreneurial opportunities, develop innovative business ideas in an iterative mode, to test ideas with potential customers and how to apply them in their daily research work.,
- ▶ Prototype your PhD - In the workshop, PhD students can build simple and creative haptic models from their research. With the approach of rapid prototyping, this is possible in all fields of research, even these are still so theoretical. Participants learn to apply exciting creativity techniques from design thinking and present their results with the storytelling method in a concise and convincing manner.
- ▶ Executive MBA – created in in cooperation with the Leipzig Graduate School of Management (HHL). This one-year course offers 20 specialists and managers from industry, as well as entrepreneurs, the chance to achieve an academic education whilst also combining it with their own innovation project, or in some cases their own start-up company.
- ▶ Fraunhofer Venture Days (FDays®) – during the workshop, participants have the opportunity to support research teams by developing new technologies and patents to economic success. In doing so, participants act as business designers in creating a business model and preparing the market launch, which often results in the creation of a joint company.
- ▶ Networking events – Every semester, numerous networking events take place which involve various professionals for the Munich entrepreneurship ecosystem including local business and UTUM alumni
- ▶ THINK.MAKE.START: The interdisciplinary THINK.MAKE.START lab course is a programme offered to master students of TUM from the computer science, electrical engineering, mechanical engineering, business and other faculties and operates with the TechTalents programme. During the programme, students develop and build innovative products in just 14 days with help from experts from industry and research who expose them to methods and technology to support them in developing a business concept. The programme is financed by the Zeidler Research Foundation and is free of charge to participants. The teams have free access to MakerSpace and get a budget for tech and prototyping material. On the last day of the programme, the demo day, all teams present their projects in front of a jury and pitch the concepts to guests from industry, other start-ups and university.
- ▶ Manage&More: Each semester, UTUM grants 20 scholarships to committed, entrepreneurial students from all Munich universities and faculties and accompanies them over three semesters. Each semester, students work in interdisciplinary teams with new problems and develop your entrepreneurial know-how. Beginning with a one-week intensive Business Design Bootcamp, students are provided a foundation

of basic methods including the Design Thinking and Human Centered Design concepts, which help them solve entrepreneurial problems from the user perspective over the remaining semesters, all under the guidance of professional coaches. At the beginning of the program, students are provided with an experienced mentor from the business world and are supported with mentoring, coaching and ten free soft and hard skills workshops during the life of the programme from the beginning to the end of the semester. The programme allows students to gain new insights into their own values and goals through the intensive, professionally-guided discussion relating to their own personality.

- ▶ Spring School: Run every year since 2006, the *Spring School* invites students from different faculties to work on a topic that a company provides as part of the innovation process of the business. Starting with the business issue or topic, students are encouraged to pursue ideas of their own interest. The first right on the IP of the concepts developed in the workshop go to the company, however for any ideas they are not going to take forward, students are offered the incentive that they will receive ownership of any ideas that the company doesn't want. In a recent iteration of the programme, nearly 300 ideas were created in two days of ideation, which were then narrowed down to 8 and developed. Results of this programme include internal innovations for the company, start-ups created as well as patents filed.

6. OUTPUTS

Some of the outputs from the UTUM programmes include:

- ▶ Over 2000 participants in UnternehmerTUM programmes each year,
- ▶ More than 50 high-growth technology start-ups annually,
- ▶ over 80 Manage & More scholarship masters have taken the step from the student to the founder in the last 10 years,
- ▶ Some high-profile start-ups who have emerged from UTUM include:
 - Flixbus, a digital platform for long-distance busses
 - Konux, an artificial intelligence company enabling predictive maintenance
 - Navvis, an indoor-navigation solution
 - Tado, a smart home company providing smart thermostats

Some of the additional outcomes that UTUM achieves includes patents and licenses, companies benefitting from new ideas and new technologies and as well as students with specific entrepreneurship skills and mindsets.

7. IMPACTS

Furthermore, through the exposure of UnternehmerTUM in the TUM curriculum, **students** are becoming better equipped for the world of business as well as being offered an alternative career path as an entrepreneur. These possibilities, and the extensive exposure of students to UnternehmerTUM within their students, expands the career options for students at TUM.

With UTUM services focussed on **regional business, business professionals and regional entrepreneurs**, UTUM's potential impact is significantly widened. In doing so, UTUM's impact is on the innovation capabilities of companies through the development of greater skills and knowledge or through the exposure of companies to alternative sources of innovation. However, it is not only the exposure of these 'external' stakeholders to innovation services, but also bringing them in contact with TUM as well as each other through collaborative activities, networks and events that multiplies UTUM's impact in the region, and makes it a genuine hub for innovation and entrepreneurship.

UTUM now has over 15,000 **alumni** who they have assisted, which has translated into the development of a strong Alumni Network. The Manage & More Alumni Association was founded in July 2005 and has now included more than 500 members. As a strong, entrepreneurial network, he accompanies you through your active time as a scholarship holder and offers you numerous career opportunities through the exchange with other entrepreneurially interested and committed personalities.

The specific impacts described above, amount to UTUM creating a more entrepreneurial Bavarian region.





Support & Influencing factors

8. SUPPORTING MECHANISMS

State Government policy direction

The policy direction of the Bavarian state government, including initiatives designed to push Bavaria and Germany's Silicon Valley¹, characterise the proactive approach taken by the State Government. The support in terms of policy focus and finance allow centres of innovation, such as UTUM and technology-focussed business and new ventures, to develop into world leaders.

University engagement embraces by university management

The strategic acceptance by TUM senior management of the need for external engagement through engagement with business and entrepreneurial activity supports UTUM's vision. This underpins the willingness of the university to provide funding as well as connection and promotion of UTUM programmes to its courses, students and faculty.

Access to MakerSpace

Covering 1500 square metres, 'MakerSpace', one of Europe's largest publicly accessible high-tech workshop, enables companies, start-ups and creatives to produce prototypes and small batches using state-of-the-art machines such as large 3D printers. MakerSpace acts a hub to bring together businesses together with students and researchers whilst offering business the opportunity to get their innovation departments and employees out of the office with access offered through one-off access fees as well as subscriptions.

9. BARRIERS AND DRIVERS

Some of the **barriers** facing UTUM include:

- ▶ Universities can be too focused and lack flexibility - One of the issues with entrepreneurship at universities is that each group within the university has their own focus, which can be too focussed for a 'horizontal' topic like entrepreneurship and innovation. To foster entrepreneurship, multiple access points to entrepreneurship thinking and acting, in a cross-disciplinary manner, need to be created, rather than staying within a faculty.
- ▶ IP - Within entrepreneurship programmes, IP is often created. As such, it requires a means for managing this which is transparent and that enables the individuals or organisations interested in taking the idea forward, to do so easily. A barrier to operating an entrepreneurship programme within a university would relate to how IP is handled as universities have strict rules that can, at times, inhibit the use of the IP and the ease of using it.

Some of the **drivers** for UnternehmerTUM include:

- ▶ *Fostering technical, high-growth entrepreneurship* - UTUM are motivated to support the initiation of highly growth companies with a technical background by creating different access points to the process which align with the different interests of the stakeholders.
- ▶ *Stimulating entrepreneurial interest in technical students* - being a technical university, students were not naturally interested in the topic of entrepreneurship, which questioned why they would commence a start-up. They were principally interested in developing technology, so UTUM aligned their activities with the language and interest of technical students in order to create a different entry point for their technical students into entrepreneurship. The new prototype and development capability, 'MakerSpace', allowed students to create and develop their technical ideas including making a prototype. Following this, UTUM would then have a ripe setting for talking about further development of their prototype ideas and the needs for entrepreneurial skills and knowledge.
- ▶ *Working with leading business* - A major motivation for UTUM was to work with external companies, because of their desire to create a realistic entrepreneurship process and expose students to business processes and expectations. This has had the effect of getting students really interested in the topics as they experience in their interaction with the company and soon learn they have to deliver your results.

10. FUTURE CHALLENGES

An oft-cited barrier to university-business cooperation is in respect to cultural differences. It is no different for an entrepreneurship centre on the edge of a university, which drives new venture creation as well as interacting as a key player in the innovation chains of companies. Timelines, an outcomes focus and professionalism are some of these differences, which make the work of UTUM more challenging. Owing to these differences, building trust with local and international business partners that UTUM work more like a business has taken time, and continues to be a challenge, owing to the false expectations they had of a centre attached to a university.

The rapid recent growth of UTUM has also presented challenges for the management of the organisation as it shifts from a small and fast-moving entity into a medium-sized organisation responsible for many staff, programmes and assets. A key challenge is to not lose the flexibility and ability to react to the market, which has characterised its growth until now, whilst ensuring that appropriate structures and systems are put in place to ensure its long-terms viability.

11. CONTEXT

Located in the most southern German state of Bavaria, the most economically developed state of Germany, is a strategic advantage. UTUM has geographical proximity to the head offices of large key corporate companies such as BMW and Siemens and research institutes such as Fraunhofer and Max Planck Institute. Not surprisingly, given the potential opportunities, UTUM has worked hard to develop alliances and partnerships between the UTUM and these large enterprises.

One of the reasons for the Bavarian state's economic resurgence after the second world war has been the proactive and strategic approach taken by the Bavarian state ministry to developing economic activity within the state. Essentially an agricultural economy, the development of technology as a key driver for the state's development has placed TUM and UTUM in an important position.

The need for TUM and other universities in Bavaria to interact more profoundly with industry has been a leading factor in the state's development. Developing leading research and development skills as well as having appropriately skilled workers to fuel this growth have been a result.

12. KEY SUCCESS FACTORS

Some of the factors most contributing to the success of UTUM are as follows.

Offering the entire entrepreneurship process

Acknowledging that it takes a significant amount of time to develop programmes to cover the entire entrepreneurship process, in a relatively short period of time, UTUM has developed a complete service offering for entrepreneurial teams and innovative businesses at any stage of their life cycle. This capability enables UTUM to approach these stakeholders with the confidence that at any stage of their development, UTUM can provide support for the development of more entrepreneurial or innovative concepts and capabilities. This end-to-end service offering thus offers a one-stop shop for such services and positions them as an ideal partner for any of their target group or the region generally.

Taking entrepreneurship and innovation outside the university

Whilst UTUM has a vision for covering the entire process of entrepreneurship, the university environment tends to specialise and focus. This is ideal for research, but not for creation of (applied) entrepreneurial activities, whereby you need to cover the entire entrepreneurship process. A key factor for their success therefore has been to take UTUM outside the university as a separate company (companies) to enable the range and flexibility to offer a full suite of services. UTUM can only access these innovative companies, or truly assist entrepreneurs from TUM, if they offered the full range and process of innovation and entrepreneurship.

Furthermore, there were a range of other benefits that came from existing outside of the university. The hiring of entrepreneurs and professionals with business experience was made easier as was determining appropriate salaries for attracting the right talent. Additionally, an initial obstacle for UTUM when offering their services to business, was the resistance of business to working with the 'university'. However, a further benefit was that they could not only say they were not the university, they could also they act differently to a university (e.g. in respect to how IP is handled) and be more business-like in nature. This helped to slowly convince key businesses in their region to start working with them.

Addressing all relevant stakeholders

As an external company, and with a services across the full spectrum of the entrepreneurial lifecycle, UTUM have the freedom also to offer their services to a broad target group: TUM stakeholders, students and academics, as well as regional business and entrepreneurs. This makes them a strategic partner for their region and allows them to work closely with their regional Bavarian government to develop the entrepreneurship and innovation capabilities of their region. This was a strategic intention of UTUM and positions them differently to other university-connected centres for entrepreneurship and innovation in their region.

Entrepreneurship and business experience

A key to the centre's success lies in hiring professionals with personal experience in entrepreneurship, knowledge transfer and in working with industry. The employment of lecturers and mentors from industry provides a flow-on of valuable experience and hands-on knowledge to students and, as a result of this first-hand knowledge, students get acquainted with the methods, processes and actual thinking of industry.





Further Information

13. MONITORING AND EVALUATION

There are several indicators measuring the success of UTUM. Firstly, there is third party funding such as money earned through partners and funding which is received for projects each year. Secondly, the number of start-ups and business support can be a measure of how successfully UTUM is operating. Other results cannot be measured accurately as they are often creating economic impact for the region. Examples include: R&D flowing back to the university from the new start-up, people employed by start-ups and the quality of inventions transferred through the strategic partnerships that find their way into finished products.

14. SUSTAINABILITY MEASURES

The organic growth that UTUM has experienced over the last five years, growing from 40 staff to 170, has been a measure of sustainability. This is because the growth has been sustainably built upon diversified income sources. Philanthropic and university sources have been supplemented by business and government sources of financing, whilst initiatives such as MakerSpace and Venture Fund are developing as vital passive income sources for the centre in the future.

The ever-growing footprint of UTUM alumni, including the TechFounders UnternehmerTUM Alumni group, as well as its expanding local and international network, including world-leading research and business organisations, further help to secure UTUM's position in its ecosystem.

Internal systems, structures and models as well as staff training and support provide additional measure of sustainability for UTUM's programmes and activities.

15. TRANSFERABILITY

A limiting factor for the transfer of UTUM's practices is its early funding source, primarily from a private benefactor, which allowed UTUM to invest in facilities, programmes, employees and equipment at an early stage than their own income would allow.

A further limiting factor could be that UTUM is affiliated with one of Europe's leading technical universities in Germany's most economically-advanced states, which provides it with access to resources, a large number of elite students and also makes it easier to attract world-leading business partners.

Nevertheless, UTUM's strategy, methods and programmes as well as its key success factors provide best-practice examples for others to follow and are thoroughly transferable given the appropriate commitment.

16. AWARDS AND RECOGNITION

Some of the awards include:

2014 - Number 1 ranked German Entrepreneurship University TUM (Gründerradar)

2011 - Together with Technische Universität München:

- ▶ 1st place in the university ranking for start-up promotion in the study "From student to entrepreneur"
- ▶ Award for the concept "TUMentreprenurship" in the competition "EXISTGründungskultur" run by the Federal Ministry of Economics and Technology

2009 - World Economic Forum Study "Educating the Next Wave of Entrepreneurs", UnternehmerTUM as Good Practice – Global Education Initiative

2008 - Good Practice for Europe - EU study "Entrepreneurship in higher education"

2007 - German Employer Award for Education

2005 - "Excellent Technology and Start-Up Centers" – Future Prize, awarded by SAP

Additionally, any of the new ventures coming from UTUM have also won awards, both locally and internationally.

17. PUBLICATIONS AND ARTICLES

Engel, Jerome S. (2016). Global Clusters of Innovation: Entrepreneurial Engines of Economic Growth Around the World, Edward Elgar Publishing Ltd, ISBN-10: 1786434342

18. LINKS

UnternehmerTUM www.unternehmertum.de

Techfounders <https://www.techfounders.com/>

UVC Partners <http://www.uvcpartners.com/>

Xpreneurs www.xpreneurs.io

Digital Product School <http://digitalproductschool.io/>

Tech fest Munich <http://www.techfestmunich.com/>

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20. REFERENCES

ⁱ <http://www.muenchen.de/aktuell/2016-02/vorstellung-zentrum-fuer-gruender-in-zukunftsbranchen.html>