

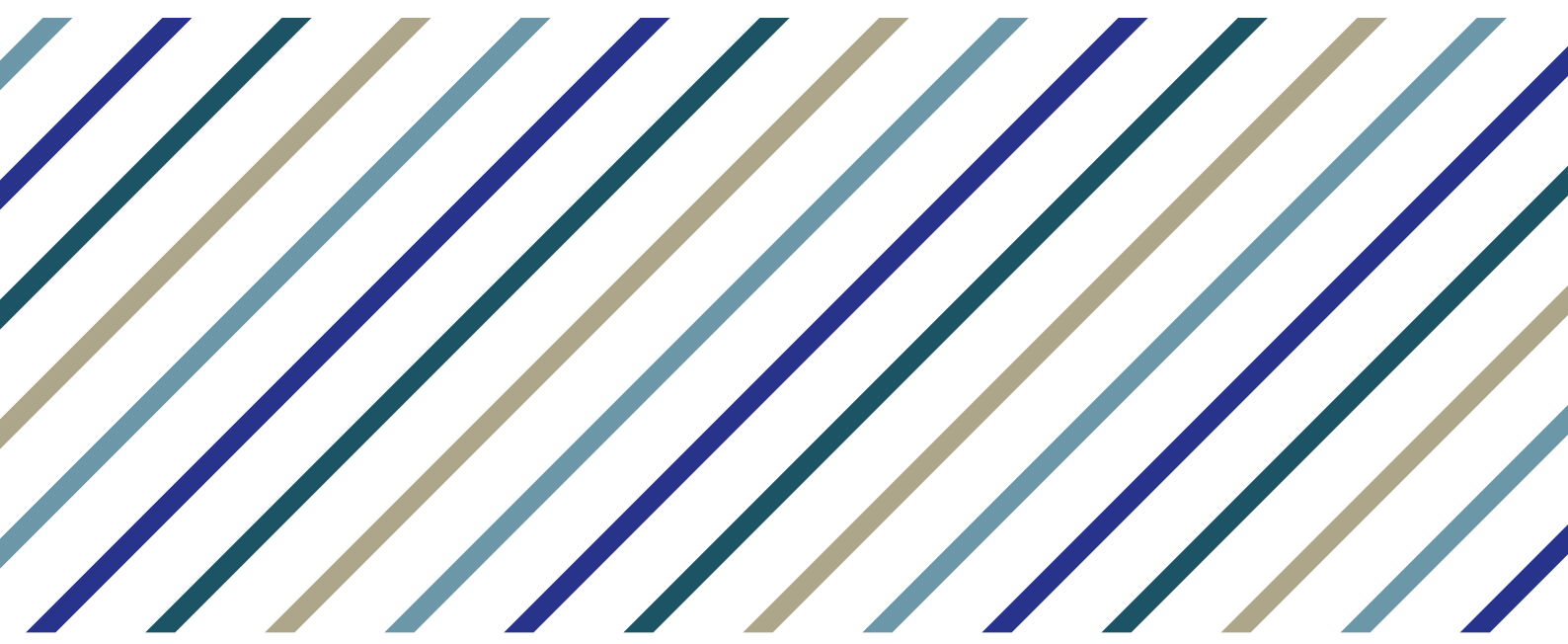


CONFERENCE DOCUMENTATION

»INNOVATION
PARTNERSHIPS
BETWEEN SCIENCE
& INDUSTRY«

7. NOVEMBER 2016

Baykomm Communication Center
in Leverkusen



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▼ 01 MOTIVATION AND BACKGROUND

Universities are seismographs, facilitators, and promoters of economic and social development. The **success of the knowledge society** depends on how well teaching and further education as well as research and development are guided by current and future social, economic and environmental requirements. Inventions from science have to be developed as quickly as possible into innovations, be it marketable products, processes and services or new business models. A **strategic knowledge and technology transfer** is essential for utilising these potentials and contribute to strengthening Germany as a competitive location.

Political awareness for knowledge and technology transfer has been increasing in the past decade and even more so in the last few years, visible in activities like the “transfer audit” in Germany by the Stifterverband or several “transfer initiatives” in many of the Federal States in Germany. The **“third mission”**, i.e. knowledge and technology transfer besides the two traditional missions of research and education, is now a “profile element” in all German Universities of Applied Science and many Universities.

Although much has already been achieved, universities and research institutes have to engage intensely with current and **future challenges** and constantly align their strategies, processes, and structures to be able to meet the needs of different actors. The German Federal Ministry of Research & Education (BMBF) has acknowledged this and just recently launched a large scale programme **“Innovative Hochschule”** (“innovative universities”) with a budget of around 550 million EUR, which shall further strengthen the capacity and approach to knowledge and technology exploitation from academic research in industry, particularly in smaller universities and universities of applied science. Also the **German Council of Science and Humanities** (“Wissenschaftsrat”) has recently published an expertise specifically looking at knowledge and technology transfer

in the German university system, stressing the utmost importance for a strategic approach of the institutions towards transfer. And finally – from a **multi-level governance perspective** – also the European Commission has launched several activities to strengthen innovation partnerships, most notably the EIP Initiative (Entrepreneurship and Innovation Programme) with its focus on “key grand challenges” to be addressed by these partnerships from academia and industry.

Not surprisingly, also in industry there has been a heavy focus on knowledge and technology transfer recently. For the business sector a **new era of innovation is emerging**, characterised by aspects such as open data, open and collaborative science and a network-driven approach to R&D. In fact: digitalisation is posing such a challenge to industry and policy makers alike, that the need for strong knowledge interchange with academia is of utmost importance for future success. In this context, open innovation will be key to future success in many if not all industries. But this also requires the universities and knowledge institutions to practice open innovation – which at the moment is not the case. As research shows: despite the rise of research networks in the past decade, their activities are just starting to scale. And in all this, **trust is of vital importance** – it is a prerequisite for collaborative success!

The **goal of the conference** was not only to discuss successful models for (regional) innovation partnerships but also to obtain answers to the following guiding questions: What are the social and economic challenges innovation partnerships between academia and industry/society have to face in the next five to ten years? How should strategies, processes, and structures respond to these challenges? How can they (proactively) contribute to a positive development of Germany as a business and innovation location?

BACKGROUND

ORGANISERS OF THE CONFERENCE

Stifterverband für die Deutsche Wissenschaft, Heinz Nixdorf Foundation, NRW Innovation Alliance (represented by the Münster University of Applied Science and the TAFH Münster GmbH), RWTH Aachen. The conference was hosted by Bayer AG in the Baykomm Communication Center in Leverkusen.

KEY NOTE SPEAKERS

Dr. Monika Lessl Vice President, Head of Corporate Innovation and R&D, Bayer AG, Leverkusen: "Global Innovation Partnerships: Success Criteria and Challenges"

Prof. John Latham Vice-Chancellor, Coventry University: "Universities as Regional Innovation Hubs: Success Criteria and Challenges"

Dr. Pieter Dillingh Member of Board, Kennispark Twente

Dr. Kees Eijkel President, Acquisition in Start-Ups, University of Twente

Moderation:
Dr. Elke Müller Head of Department Research and Career, RWTH Aachen

SPEAKERS – INSTITUTIONAL STRATEGIES FOR INNOVATION PARTNERSHIPS

Bram Wijlands Director Center of Technology Transfer and Entrepreneurship, RWTH Aachen

Dr. Thomas Rettich Head of Research Coordination, TRUMPF GmbH + Co. KG, Ditzingen

Paul van Dun General Manager, Research & Development, University of Leuven

Moderation:
Andrea Frank Head of Department Research, Transfer and Science Dialogue, Stifterverband, Berlin

SPEAKERS – ENTREPRENEURSHIP AS DRIVER FOR INNOVATION

Benjamin Soffer Chief Executive Officer, T3 Technion Technology Transfer, Israel Institute of Technology, Haifa

Prof. Dr. Henrik Botterweck Vice-President Study and Research, University of Applied Sciences Lübeck

Dr. Andreas Braasch Managing Director, IQZ, Wuppertal

Moderation:
Hartmut Koch SCIENTIFIC CONSULTING
Dr. Schulte-Hillen GmbH, Bonn

SPEAKERS – BUSINESS DEVELOPMENT IN ACADEMIA AND INDUSTRY

Sam Liss Director of Business Development, Physical Sciences, Office of Technology Development, Harvard University, Cambridge, MA

Andreas Klein Member of the Board of Management, Operations, Schmitz Cargobull AG, Horstmar

Carsten Schröder Vice President Research Management and Knowledge Transfer, University of Applied Sciences Münster

Dr. Volker Meyer-Guckel Deputy Secretary General, Stifterverband, Berlin

CONFERENCE HOSTS

▼ 02 INSTITUTIONAL STRATEGIES FOR INNOVATION PARTNERSHIPS

Benefits of successful innovation partnerships from an institutional perspective

Successful innovation partnerships need to involve a **bidirectional exchange**, generating benefits for both partners. Universities typically expect deeper insights into industrial challenges and needs. With industrial funding, they can increase their amount and quality of research, resulting in more qualified staff, more publications, and more efficient knowledge and technology transfer. Industry, on the other hand, strives for insights in long-term and cutting-edge research to keep up with trends in relevant high-technology fields. The access to academic research networks grants them a privileged access to innovation (i.e. intellectual property, new processes, or products). Empirically, industrial companies' turnover from novel products benefits from cooperation with universities and generally functionally diverse partners. Moreover, collaboration with academic partners provides opportunities for recruiting, investments (e.g., in promising start-ups), and societal outreach.



→ **R&D partnerships** have become an issue both in academia and industry for a number of reasons. Academic institutions have been confronted with increased competition among universities for talents and funding. The industrial side faces accelerating demands for innovation, for example due to the current trend of automation and data exchange in the manufacturing industry, often referred to as "Industry 4.0". For both sides, collaboration thus has become more attractive: Universities may attract additional third-party funding, while industrial actors need to invest more in R&D and gain the opportunity to partly outsource their research activities. This allows moreover a more flexible approach to innovative projects, resembling some kind of "start-up thinking".

All participants were asked to complete the sentence „Innovation partnerships between science and industry - when I look into the crystal ball, I see ...“

Conference Participant Academia

“...an ever-increasing level of engagement between universities and industry. It's inevitable, given the need for companies to focus on relatively lower risk projects that will deliver more immediate results. Companies no longer have the luxury to engage in true long-term fundamental research. Universities, who are faced with a very challenging funding environment from traditional government funding sources, are well positioned to fill this gap. However, it's incumbent upon universities to rethink how they engage with companies and how they can best streamline this process.”

Challenges and success factors of innovation partnerships from an institutional perspective

Three areas crucial for the partnership's success have been identified: First, to ensure visibility, second, support by and flexibility of the institutional structure, and third, long-term commitment at all levels.

→ **Ensure visibility:** Empirically, the vast majority of partnerships has their origin at the research level. For all actors, it is thus crucial to ensure the visibility of their strengths. The industry should regularly scan the research landscape to identify potential partners. Universities in turn are encouraged to approach the industry actively. Second, innovation partners are recommended to communicate their collaborations to the public as transparently as possible, even if this is not possible to full extent.¹

→ **Support by and flexibility of the institutional structure:** To successfully initiate innovation partnerships, the partners need to have at hand sufficient resources in terms of funding, staff and infrastructure. Moreover, there are several institutional features that foster collaboration by removing organizational barriers and thus reducing the efforts needed for successful collaboration: For both industry and academia, it is crucial to establish clear lines of communication, ideally with key account managers or one-stop shops acting like "spiders in the web who can tie everything together". Geographic proximity of partners also eases collaboration. Regarding universities, there is a further need for efficient support structures (e.g. assistance in drafting and negotiating agreements, "building boxes" provided by the legal department) and the fostering of internal cooperation also across "faculty walls", since successful research is most often interdisciplinary in character. Moreover, every cooperation is totally different and has its own character. This has to be reflected in the respective agreement, there is no "one size fits all".

→ **Long-term commitment and mutual institutional trust:** Besides the above-mentioned preconditions, long-term commitment and mutual trust of partners are the most decisive success factors for innovation partnerships. To reach this, both partners should share an understanding of the counterpart as an economic partner with "skin in the game" and strive for a common vision and common strategic goals. One of the most important points of debate is intellectual property: Industrial partners sometimes expect that universities work exclusively with them – which usually is a no-go for academic partners, and can only be granted on the basis of temporary agreements with limited scope. On the industry's side, it is often difficult to give

externals access to critical technology and partners are (dependent, of course on the type of business) rather reluctant to open innovation processes.²

Helpful for building trust is also a strong commitment to long-term collaboration. Long-term relationships are both the easiest to maintain and the most productive ones, helping both to build universities' capabilities and infrastructure as well as to effectively use the various strength of universities (by the industry). This regards both the collaborating researchers, but also the organization leaders: A reliable work attitude and staff exchange between partners help to generate trust at the working level. Labour laws often cause difficulties here. Maybe even more important is, that successful innovation partnerships rise and fall with the full and active endorsement of the university management. Visionary leaders, who provide visible support and input at the highest level from both the university and the company are decisive to build capabilities and to ensure engagement throughout their organization, and to ensure continuity of policies and strategy. Personal discontinuity is often an obstacle to that goal, in particular in the case of universities.

¹Cf. <https://www.stifterverband.org/transparenz-empfehlungen>; ²Intellectual property usually is not a barrier for collaboration. For example, at the University of Leuven, only 4 out of about 2000 planned agreements were not set up due to unsolved IP issues and discussions.

03 BUSINESS DEVELOPMENT IN ACADEMIA AND INDUSTRY

Benefits and strategies of successful innovation partnerships from a business development perspective

Universities can bring major benefits to successful innovation partnerships if they manage to think in the “**white spaces**” of development and thereby to create value for future commercialization and economic and societal progress, especially in engineering but across all disciplines as well. Considering the **global challenges** (food security, climate change, disruptive digitalization), we are in central times for innovation and close innovation partnerships between universities and industry are required. But also for universities from a peripheral environment, or even a region which has undergone severe **structural change** (such as the Twente region with a massive decline of the textile industry followed by high unemployment), developing innovation partnerships and entrepreneurial spirit can be a good option for transformation. The case of Twente teaches us that a long-term development process has to be accepted which includes also set backs. After initializing a big movement towards an entrepreneurial university in the 1980s (including technology transfer programs and setting up start-up programs and facilities), the university failed to build a real “innovation ecosystem” in the region because relevant investments from industry into R&D and value-creation activities in the region were missing – despite successes in transfer activities and education.

Against this background, in a **joint effort** with the city, the university of applied science and other partners, the university developed “the no-man’s land” around the campus in Enschede in an integrated strategic approach. This approach is coupled with a bottom-up mentality, which is characterized by “creating and utilizing energy” for innovation partnerships and knowledge interchange from all stakeholders of the university (students, PhDs, academic staff, professors) and beyond.

Conference Participant Intermediary

“... big chances for SME and universities of applied sciences establishing those partnerships with joint goals and resources.”

From a **business perspective**, companies need innovation partnerships today more than ever in the past 20 years due to digitalization, i.e. **co-creation is central for business success**. But many SMEs cannot invest into larger institutional partnerships with universities like multinational enterprises can. In many industries, companies have tried to optimize costs and processes in recent years to find answers to increasing global competition and saturated markets – but this is rather to lead to an “automation dead-end” than to really preparing industries for the disruption which is going to happen in the next decade. Particularly for large, global corporations, it is seen vital to establish **internal innovation networks as a cross-organizational structure**, as has been explained by Bayer. For instance, Bayer is using internal “innovation ambassadors” to cultivate an innovation culture (including the openness to failure) and “innovation trainers” to strengthen the internal (absorptive) capacity for open innovation.

Strategically, the systematic exploitation of the “**external pools of knowledge and expertise**” is seen as a fundamental for future innovativeness – despite differences in both industries and business size. In particular, large enterprises such as Bayer have developed comprehensive approaches to utilize external know-how and co-create. For this purpose, Bayer, for instance, has established the “**Bayer Open Innovation Family**” comprised of five different partnership models (Grants4Targets, Grants4Traits, Grants4Tech, Grants4indications and Grants4Apps). Starting in 2009, Bayer has used the good experiences made with Grants4Targets to expand the open innovation activities on one central platform to foster cocreation. The particular value of this approach is seen in the possibility to “start small”, i.e. engage with new partners without greater commitment, but then build upon this to drive co-creation more strategically. Besides the open innovation platform, Bayer has a number of additional partnership types, ranging from joint labs (characterized by very close interaction) to joint ventures characterized by an “arm’s length” relationship. These different partnership models require **regular “landscape” analysis** to identify the best partners key opinion leaders, scientific excellence etc., which is easier for larger corporations than for SMEs. Also being part of a scientific or innovation ecosystem is seen as vital for partner identification purposes.

Of central importance for any successful co-creation: a **tailored model** needs to be chosen for the collaboration with fits with the ambition of all partners. Otherwise the collaboration will not be sustainable and generate the desired results.

Success factors and challenges of innovation partnerships in the field of business development

Until today, **differences between universities and companies are creating "conflicts"**, e.g. with regard to public knowledge domains (university baseline) vs. protecting own IP or with regard to educating society vs. responsibility towards shareholders. To bridge this gap, remains at the heart of knowledge and technology transfer. Thus, the **"innovation gap"** still remains a challenge, also to top-performing universities and other scientific institutions.

Recent experiences from Harvard illustrate a new approach for collaboration. Launched in early 2016, Harvard implemented the **"Industry Fellowship" collaboration model** with Tata. In this model, Harvard research labs, Harvard Business School and Tata collaborate intensively through the involvement of a so called "Tata Fellow". The Tata Fellow is a "rising star" employee in Tata (>10 yrs. of experience, potential candidate for high leadership position in Tata), who is working full-time at Harvard for one year with the research labs on specific R&D projects, while at the same time receiving training and advice by HBS (personalized executive education). HBS is new to this collaboration model of university-industry cooperation and the key purpose of this is too early on develop the invention commercially, considering business implementation requirements early on, and transform the (disruptive) invention into innovation success and commercial impact ("role of out the innovation in the company to achieve scale"). Considering the differences in collaboration concepts in the US (stronger focus on IP protection and licensing) and Europe (early-stage partnering approach), the above described innovation partnership model tries to combine the two worlds: once the R&D project with the Industry Fellowship has been completed, Harvard still tries to patent and license the innovation to finance future activities. The case of Twente, characterized by **an integrated strategic approach to university-industry development in the region and a bottom-up mentality to activate all existing potentials** in the university environment, is centered around four key requirements: talent, knowledge, finance and culture. Culture is seen as central to innovation – not processes or structures. It also includes the so-called "puppy factor" (fail fast, learn fast) to cultivate failure and learning for the future. A key learning from the past is also, that companies – and especially SMEs – are not overly interested in many of the **classical joint (PhD) projects** as a means of innovation partnerships anymore. Why? This model is associated with **too many conflicting agendas**, e.g. a PhD who has to decide for industry or an academic track, a professor with often other main motivations than creating business values etc.

New ways to **facilitate entrepreneurship and knowledge interchange** from a university perspective therefore should include:

- Facilitating SME collaboration with student companies,
- Opening research infrastructures to students (for young start-ups) and local SMEs, e.g. Twente opened a clean room for nanotechnology research,
- Set-up science shops to post new research challenges and find solutions from the crowd,
- Implement a chain of (many different) "awareness events" for start-ups (pre-start up: contests, gaming-workshops, start-up days, motivation campaigns using successful local entrepreneurs as ambassadors; post-start training: business knowledge, finance, scaling),
- Establishment of so-called "research institutes" across faculty to raise awareness in faculty about entrepreneurship and innovation partnerships with industry (e.g. MESA+ - institute for nanotechnology).

From an **industry perspective** it was put quite clear, that companies from basically all industries are facing a **dramatically changing business environment** through digitalization with completely new competitors, business models and technological requirements (terms discussed throughout the conference ranged from the "physical internet" to "digital farming"). Without strong partnership with academia, most SMEs will not be able to sufficiently cope with this challenge. In response to this, SMEs need to develop **flexible but trust-based relationships** with academia and develop internal talents (e.g. through workshops/programmes on future business development involving younger talents) to prepare for these disruptive changes. This also requires a **balance of "openness" and "closed" innovation activity** although protection of IP remains a central topic. For example, in the case of Bayer, being from a highly patent intensive industry, it was explained that patents and IP-protection remain fundamental and a key currency of R&D output, but especially in the early stages of discovery, IP protection may not be the most valuable approach for the organization. In the case of open data, for instance, Bayer does not need to own the data, but if Bayer finds interesting patterns in it, the company can profit.

▼ 04 ENTREPRENEURSHIP AS DRIVER FOR INNOVATION

Benefits of and strategies for entrepreneurship as a driver for innovation

Entrepreneurship is turning ideas into action and thus is an essential ingredient of the innovation process. At the individual level, entrepreneurship includes creativity, risk taking as well as the ability to plan and manage projects to achieve objectives. Regarding academia, the transfer of innovations and knowledge to society and economy is becoming a third core task for universities in addition to research and teaching. Thereby, **universities are being transformed from institutions of knowledge production to institutions which pro-actively promote the transfer of innovations and knowledge.** Particularly in Europe, many potential innovations get stuck in the “valley of death” between basic R&D and commercialisation. In this context, entrepreneurship is an important factor in bridging this gap.

This has been illustrated by the example of the “**start-up nation**” Israel, where both, research and entrepreneurship are complementary parts of a widely-recognized success story. Start-ups or spin-offs with strong ties to universities can be **transmission belts for technology transfer from universities to markets.** Development processes often are quick, cost efficient and agile due to resource scarcity and small teams.

Success factors for and challenges of entrepreneurship

A **functioning innovation eco-system**, where universities, technology transfer institutions and entrepreneurs have strong ties and cooperate in networks. Regarding the latter, geographic and proximity, i.e. clustering of research facilities and companies can further promote such networks.

Conference Participant Academia

“...my university engaged in networks and alliances with many partners including private and public institutions, multidisciplinary coupled in joint projects to achieve added value in the Ruhr Valley. Since our research institutes build bridges between different disciplines, and since multidisciplinary is a prerequisite to implement innovation, I expect Fachhochschule Dortmund to be a very valuable partner in its networks. Our special focus will be on added value in spin-offs and medium-sized companies.”

In order to mitigate risks associated with innovation and commercialization, **services along the whole process chain of founding a start-up or spin-off to mitigate risks are important.** Moreover, Israel is a perfect example illustrating that **venture capital and equity** are building blocks of innovation.

Economic risks associated with innovation processes as well as with founding a business should be systematically lowered by offering better and more funding opportunities to entrepreneurs. The “**third mission**” should become an essential part of universities’ commitment and responsibilities. “**Entrepreneurship is not a gift, but can be learned**”, was one catch-phrase to characterize this situation. However, this implies more than just IPs (Intellectual Property) and consultation services for entrepreneurs and start-up founders.

Culture and attitude are important ingredients of entrepreneurship, not only at the individual level, but also at the level of society. In the German context, public culture and attitudes must become more conducive in this respect; success and failure should be accepted as common parts of entrepreneurship, hence neither winners nor losers should be blamed. Furthermore, politics should draw more attention to **entrepreneurship as a policy field** to develop policy solutions and support a conducive discourse on the topic.

Against this backdrop, the **Israeli Technion Technology Transfer strategy (T³)** covers the whole process chain of innovation activities in order to mitigate these risks:

- Analysis of new inventions and concepts by Technion experts as well as external entrepreneurs,
- Incorporation of spin-off companies based on Technion IP,
- Support and investment in affiliated companies,
- Negotiation and approval of the IP and business aspects of agreements with industry.

This **example was positively acknowledged** at the conference to provide many inspirations for entrepreneurship support in Europe.

▼ 05 LESSONS LEARNED

Knowledge and technology transfer operates under a new framework of digitalisation and transformation of industry and science alike. Universities and research institutions play a central role in this context. A guiding philosophy put forward at the conference was that **“while companies create products, universities in collaboration with industry can create new industries”** – a key characteristic also for real innovation partnerships.

Conference Participant Academia

“... a vivid and broad network of organisations, persons and companies, which is more flexible and open than today.”

From a **business perspective**, in particular for SMEs, innovation partnerships are even more essential these days to answer the question **“what will be tomorrow”** and to decouple thinking from planning horizons of 3-5 years to horizons of 15-25 years. No one can predict the future, but innovation partnerships between academia and industry can help businesses to address “disruption”. To utilize this potential in innovation partnerships, **complementarity** was defined as one central parameter to make collaborations work. Put it simple: “1 plus 1 must be 3”.

The **conference “Innovation partnerships between science & industry”** gathered more than 120 experts, practitioners and users, which jointly elaborated the following **lessons learned and recommendations**:

Institutional strategies for innovation partnerships

- In a successful partnership, **research brings value to all** collaboration partners.
- Innovation partnerships need support from both the university's and the industry partners' top level management. **Leadership** from university board is essential to strategically foster knowledge interchange and develop local and – depending on context and positioning – national or cross-national linkages and networks.
- Universities and industrial companies face specific constraints – to solve them, it is essential to develop a **common understanding** of the partners' respective roles and a **shared vision of strategic goals**. Realistic expectations regarding e.g. the exclusivity of collaboration are helpful. Exclusivity arrangements can only be temporary and limited in scope.

- Successful partnerships require **long-term commitment** and a high level of **mutual trust**. One of the best ways is still to move people inter-institutionally (e.g. to embed industry staff into university structures).
- Institutionally, **“one-stop-shops”** and **key-account managers** have proven very helpful to facilitate collaboration and communication between universities or research institutions and external partners. It needs a “spider in the web” to organize and manage the process, and also to “manage expectations”.
- **Agreements should be flexible** enough to take specific project conditions into account. Legal departments should provide building boxes to those agreements.
- **Create opportunities!** Both sides should foster their visibility to enhance the chance of successful matching. Moreover, universities need to overcome thinking limited by “faculty walls”, and to promote interdisciplinary approaches in order to meet the industry's needs.
- All in all: **Investment** of the policy makers and the academic institutions themselves into knowledge and technology transfer is mandatory, not just investments in education and research, if the great societal potential of our research spending shall be utilized. This is a key differentiating factor compared to the US, Israel and other strong innovators worldwide.



Business development in academia and industry

- Innovation has now a clearly established theoretical framework but it still needs a **strong push in implementation** – with different potential models to achieve this.
- In this context, **innovation partnerships are one central feature** to make companies and – in turn – also society successful over the long-term.
- For innovation partnerships to flourish, three **key factors** should always be fulfilled: firstly, stability and efficiency of the organizations involved, secondly agility, and thirdly, a clear vision and purpose.
- At the same time, from the perception of many SMEs, the **current framework for innovation partnerships is not working properly**, especially those operating in saturated markets with stiff competition and the risk of quick knowledge leakage. Especially the political requirement to release findings from joint R&D activities receiving public funding is perceived as not feasible for many SMEs.
- The conference elaborated a number of **recommendations** to support innovation partnerships:
 - **Create one responsible office** for university-industry collaborations.
 - Develop a **capability-base management** approach for university-industry collaboration and knowledge interchange, including a strong focus on communication skills within the TTOs.
 - **Utilize complementarity**: a successful business development requires to “manage the difference”, e.g. through a holistic “alliance management”. Experiences from Bayer with the so-called “RESOLVE”-model for professional management of partnerships can help here which is applied to manage the value of relationship and culture (R), foster and sustain enthusiasm/commitment (E), ensure strategic fit (S), ensure a professional operational management (O), focus on shared learning capabilities (L) and to sustain value communication (V).
 - **Prepare strategic decisions on innovation partnerships at leadership levels but “drive” needs to be coming from bottom-up.** Therefore, identify fully committed faculty “champions” to drive the collaborations from

with the university and close coordinate innovation partnerships with him.

- **Invest sufficient time.** E.g. the development of Tata-relationship and the new collaboration model took Harvard more than three years! Transformation of the Twente region over three decades.
 - Find new, **less formal procedures for knowledge interchange** and innovation partnerships – especially needed by SMEs.
 - Utilise **tailored approaches** for each collaboration, which requires constant and ex-ante assessment of potential value and complementarity of the partners.
- All in all, monetary incentives do not work sufficiently alone, as they may build coalitions but not co-creating partnerships. A **new balance in the “collaboration behavior”**, despite the sensitivity of know-how created in joint R&D projects, will be essential for future progress and innovation.

Entrepreneurship as driver for innovation

- **Proximity matters:** proximity of start-ups to universities as well as other actors like chambers of business and commerce remains of key importance to develop business models and enables continuous knowledge interchange.
- To promote entrepreneurship, two interdependent factors need to be addressed: First, **culture** for starting businesses, both around university campuses and beyond, matters: there needs to be an intensified discussion to bring the entrepreneurial spirit into people's heads. Starting a business needs to become a "normal" alternative for everybody, which also means that we need to learn to accept failure. Second, **entrepreneurship is not a gift**, it can be taught and learned. Therefore, it should be integrated into academic curricula, particularly in technical subjects. Beyond that, technology transfer services should cover the whole process chain from the initial idea, potential assessment to valorization.
- Despite the continuing need for **access to finance**, the situation has improved visibly over the last years – at least in the seed- and start-up phase. We need to communicate this clearly so that this is no longer perceived as a bottleneck. At the same time 2nd and 3rd round financing in the growth stage and scaling of business models still requires highest attention and solutions.
- In sum, the conference participants put forward four central recommendations to strengthen entrepreneurship:
 - Better access to **venture capital** in all business growth stages.
 - More comprehensive integration of business and **entrepreneurship courses** or modules into academic curricula of all subjects, particularly the MINT to create knowledge and mindsets.
 - Identification of **new ways of support to students and academics** when it comes to IPs, e.g. by trading IPs for start-up shares.
 - **Regional institutions** (e.g. universities, research institutes, technology centers, chambers of industry and commerce, business development agencies, banks, etc.) should cooperate in **networks**, to identify synergies and to provide entrepreneurs with access to business coaches, investors and customers.



▼ IMPRINT

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