Collaboration between Universities and Society, Business & Industry in Research & Innovation

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Key Role of Universities: Transfer and Cooperation with Society and Business/Industry

- Universities develop and define their key role in **constant dialogue** with society. They render services for the society’s scientific, economic, societal and cultural development.
- The exchange is based on the universities’ **core competences in research and teaching** which are strengthened by this exchange.
- Different **types of universities** complement each other (universities, universities of applied sciences, universities of arts and music).
From Basic Research to Development and Application

In 2015, the total income of higher education institutions was € 34 bn. (Additionally, there was roughly € 16 bn administrative income of university hospitals.)

- As part of this € 34 bn budget, German universities spent € 15.3 billion on research and development.

- R & D third-party funding by business/industry amounted to only € 1.4 bn.

- Still, the universities are the preferred partner for business – science collaboration in Germany (3/4 of collaborative activities). In this respect, German universities hold a top position worldwide (Source: OECD 2016).
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Close collaboration creates Win-Win Situations: Input from Theory to Practice and Vice Versa

Close link between academia and industry in academic career paths ⇒ Long-lasting networks are established

- At the Technical Universities, particularly in the Engineering Sciences (Generally, 50 - 60% of engineering researchers have been in industry before.)

- At Universities of Applied Sciences: Appointment of professors from industry/practice as a rule
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Close collaboration creates Win-Win Situations: Input from Theory to Practice and Vice Versa

- **Researchers benefit:** Access to actual industrial research problems, access to industrial research infrastructure
- **Universities benefit:** Research funding, shared professorships
- **Students benefit:** Internships and BA or MA theses with companies, diversified career options in academia, industry or administration
- **Companies benefit:** Enhancement of innovative strength and access to the university’s research capacity, human resources
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Strategic partnerships between universities and larger (multinational) companies

Example: BMBF Project Carbon2Chem

- Making **steel production carbon neutral** by recycling the produced CO2, turning it into manure, synthetics or fuels (thyssenkrupp: 10-13 m tons p. a.)

- **Pilot site** starting production in spring 2018, proof of technical and economic feasibility within ten years

- **Investment** of approx. € 100 m until 2025; Federal Ministry of Education and Research contributes € 62 m

- **Consortium of universities and industry:** thyssenkrupp (lead), BASF, Evonik, Linde, Siemens, VW, KIT, U Bochum, RWTH Aachen, TU Kaiserslautern, FhG-ISE, MPI-CEC, MPI-Kohlenforschung and others
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Small- and medium-sized companies as the strongest R&D partners of German universities

Example 1: StreetScooter

- Development and production of utility vehicles with 100% electric drive
- Leading producer of electric utility vehicles in Europe; focus on solutions for the delivery of the so-called „last mile”
- Founded in 2010 by RWTH Aachen University together with 80 SME
Small- and medium-sized companies as the strongest R&D partners of German universities


- Project region of Dong Van Karst Plateau in the north of Vietnam
- Developing and testing innovative solutions for karst water supply: Implementation of a pilot water pumping plant to guarantee sustainable water supply for approx. 10,000 people
- German and Vietnamese partners from universities, research institutes, government agencies and industry: KIT, U Bochum, companies Klotz, KSB, Disy, GSL, Hydro-Eletrik and others
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Points to Consider

- **Academic standards** must be met; **quality assurances** lies with the universities, (incl. appointment of professors)
- **Clear rules** and **regulations** are needed, also with regard to **publications** and **IPR**.
- **Assessment of the research** must be possible (data must open to research); **publicly-funded research** must be **published**
- **Good scientific practice** needs to be followed
- **Reliable communication** towards the public is key
Thank you!
ご静聴ありがとうございました

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