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GERMANY ACADEMIC SALON 2022 REPORT

KEYNOTE SPEAKERS AND DISCUSSIONS

Building towards an innovation economy and tech sovereignty for Europe

Closing the gap between research and application will be critical for Europe's position as a tech superpower. An open entrepreneurial environment that promotes partnerships with industry is key to exploiting new technologies

THE PANEL
Charlotte Coles head of content, digital event series, *Times Higher Education* (moderator)
Malte Brettel vice-rector of industry and business relations, RWTH Aachen University

Europe is not behind on deep tech, but for it to fully exploit the groundbreaking work of the region's researchers there must be a culture of collaboration. Speaking at the Germany Academic Salon – hosted by *Times Higher Education* in partnership with Huawei – Malte Brettel, vice-rector of industry and business relations at RWTH Aachen University, said researchers needed to be pushed out of their comfort zone to become part of the innovation process.

Brettel predicted that a wave of deep tech innovation was coming, and called for business models that support the development of new technologies by bringing higher education and industry together. "Tech can only be a platform,"

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>
> **Malte Brettel**

he said. "Deep tech will be a platform. But to change something, it is always a combination of the platform and the business model together. There are many examples where this was separated…Who invented the internet and who made the business models? Who got rich? One of our main challenges is we have to learn to combine deep tech platforms, but if you look at European universities, we also have to develop appropriate business models that will lead to change."

Researchers and entrepreneurs think differently, Brettel said. Researchers are focused on new technological developments, while entrepreneurs want to create the next experience. To support an innovation economy, both parties need to converge and learn from each other. "If you look at someone who is developing technology, their first and foremost aim is that the technology is working properly," Brettel said. "However, if you look at entrepreneurs, they never think it through 100 per cent; they make experiences. Only if we can combine these two things can we work towards an innovation economy, and can we work to enhance European [tech] sovereignty."

An open system was needed to facilitate collaboration with industry. If a university is a nucleus of talent, collaboration within the institution and with industry partners is necessary to bring new tech innovations to market. The success of the University of Cambridge, Stanford University and Imperial College London were models to look to, said Brettel, who noted that industry is acutely aware of the disruptive potential of on-campus innovation.

European tech sovereignty is important for many reasons, not least that a successful tech sector would be self-sustaining, attracting the inward investment that supports innovation in deep tech. A digitally empowered Europe can operate from a position of strength that would allow it take on more ambitious projects at scale. "Digitally, and also from the deep tech perspective, our empowerment always helps us have a certain position of strength," Brettel said.

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> **Malte Brettel**

One of Europe's strengths lies in the shared understanding of the strategic importance of digital technologies such as artificial intelligence and machine learning, but for European tech sovereignty to flourish, it was critical that regulatory frameworks did not extinguish the spirit of entrepreneurialism. Here, there was a tension between issues such as data protection and "the free unregulated space" that needed to be reckoned with. "If we protect too much, we risk the business models," Brettel said. "If we don't protect enough, we can develop the models, but we risk what will be done with data."

Brettel urged Europe to think internationally in the search for regulatory frameworks that maintain openness and competitiveness. The pandemic was a reminder that crises place untold pressure on existing business models and disrupt entire economies, forcing policymakers, industry and researchers to recalibrate their strategies. Issues such as supply chain resilience and food security were the type of challenges that could not be solved by one country's research base alone, Brettel concluded.

TECH SOVEREIGNTY

Digitalisation and the search for a sustainable future

The wholesale digitalisation of society can help cut carbon emissions and transform the world we live in – but the speed of implementation is critical

THE PANEL
Charlotte Coles head of content, digital event series, *Times Higher Education* (moderator)
Ingobert Veith vice-president of public policy, Huawei Germany

The conversation surrounding the climate crisis and what can be done to curb carbon emissions often focuses on the need for political will, international cooperation and behavioural change. But in his keynote at the Germany Academic Salon, Ingobert Veith, vice-president of public policy at Huawei Germany, underlined the important role that technological innovation will play on the road to sustainability. Identifying the circular economy as key model for our sustainable future, Veith explained why digitalisation – and the power of data – will be central to cutting greenhouse gas emissions. He argued that many small actions, such as switching out mechanical electrical switches for more efficient optical components, could make huge contributions, but we need to act fast and think big.

"To make the usage of digitalisation more sustainable, a little will not be enough," he said. "A little improvement is not enough – we need a comprehensive approach to digitalisation and a transformation in society and industry in order to meet our climate targets." In a circular economy, industry would embrace alternative models of construction, moving from concrete to a modular approach using prefabricated materials. Systems such as public transport and traffic management could be revolutionised by digital technologies, helping societies meet sustainability targets. The transformations we make in our physical world would all be facilitated by digital technology.

> *We need a comprehensive approach to digitalisation and a transformation in society and industry*
>
> **Ingobert Veith**

"Digitalisation is the glue that holds these things together," Veith said. "It is using existing technologies for more efficiency. If you take public transport, with digitalisation, the network planning, the construction and the management of stations could be better. We could better organise passenger flows. We could optimise the route of passenger transportation and better use and manage train capacities." To implement such a system, there needed to be a "central mobility data marketplace", which used data efficiently, safely and securely. "This data needs to be on time, accurate and accessible," Veith said. "And of course it needs to be safe and secure, and this is something that is still missing." Furthermore, having an overarching strategy for digitalisation would allow societies to utilise the full potential of extant technologies to produce efficiencies, such as deploying artificial intelligence to reduce the energy consumption of a network.

Veith said the tech industry had a responsibility to improve its energy use and drive new standards for sustainability. He acknowledged that there was widespread support for these measures but that a clear purpose for such initiatives needed to be communicated to bring about transformative change. He urged industry and policymakers to engage in a comprehensive digitalisation scenario, which would not just be a question of developing new technologies but reappraising existing tech, and the creation of a political and cultural environment in which innovation was supported at scale.

> *Digitalisation is the glue that holds [our world] together. It is using existing technologies for more efficiency*
>
> **Ingobert Veith**

"My message here is that it is not a single technology, it is not a single measure," Veith said. "It is a comprehensive approach you need to apply. For example, [Huawei is] good at providing mobile networks and mobile sites, and this is where we have already tried to apply this [approach] with antennas that are getting lighter and lighter, and more integrated, consuming less energy. This whole effort is to bring the energy consumption significantly down. It is to make all the small parts a bit more efficient to have a huge overall effect."

It was vital to build digital infrastructure for all and to support digitalisation with a regulatory framework that safeguarded data while offering a platform for innovation. Governments can do this, said Veith, and by clearly defining their vision they can encourage buy-in and encourage society to view digitalisation as a road map for change.

Supporting innovation through industry-academia partnerships

It's essential to combine research excellence with entrepreneurialism to deliver deeper collaborations between industry and higher education

THE PANEL
Charlotte Coles head of content, digital event series, *Times Higher Education*
Laura-Marie Edinger-Schons vice-president of sustainability and information provision, University of Mannheim
Gerhard Kramer senior vice-president of research and innovation, Technical University of Munich
Alistair Lawrence head of branded content, *Times Higher Education* (moderator)
Jörg Rocholl president, European School of Management and Technology

Partnerships between academia and industry are critical for creating the ecosystems to exploit new technologies. During a session at the Germany Academic Salon, leaders from the German higher education sector called for stronger ties between industry and academia to bring technology out of the lab and onto the market. Universities facilitate cooperation with industry partners free from the pressure of competing commercial interests, the panel said.

"You need a backbone organisation that is objective and neutral and brings

the partners together, and I think that is something that we can be as universities," said Laura-Marie Edinger-Schons, vice-president of sustainability and information provision at the University of Mannheim. "In many cases, companies have difficulties collaborating with each other on certain topics that are systemic, that are important, and that are grand challenges – health and food are two examples. Companies sometimes need an objective platform to collaborate on these issues, and I think that is where we can come in as universities."

The larger the research project, the greater the need for collaboration, not just

> *Companies sometimes need an objective platform to collaborate on these issues*
>
> **Laura-Marie Edinger-Schons**

INDUSTRY-ACADEMIC COLLABORATION

> *It is really important to come up with independent insights that are not biased by monetary considerations*
>
> **Jörg Rocholl**

between industry and academia but across disciplines. There was a lot of potential for collaborations in sustainability, the panel said. Jörg Rocholl, president of the European School of Management and Technology, said that the 2022 UN Biodiversity Conference in Montreal would underline the need for interdisciplinary approaches to tackle environmental degradation. Economics and natural sciences needed to pool their knowledge bases and create a framework for costing the damage being done to the planet. "This could be done within a given university, which is really a great opportunity, but it could also be done across universities and non-university research institutes," Rocholl said.

The pursuit of sustainability was changing the culture on campus and across higher education, with students wanting to better understand the impact of the climate crisis, while universities were searching for metrics to measure the success of sustainability efforts. "There are more and more rankings that consider impact beyond mere publications and third-party funding," Edinger-Schon said, arguing that this was a challenge for university governance that required systemic change and incentivising transparency around social impact.

Digitalisation has changed the research landscape. Many subjects have global significance and require global perspectives, but the panel spoke of the benefit of building regional pockets of excellence before finding international partners. Gerhard Kramer, senior vice-president of research and innovation at the Technical University of Munich (TUM), spoke of the importance of applied research, of connecting teaching to entrepreneurship, and of breaking down the traditional barriers between faculties. He cited TUM's Venture Labs initiative as an example of how universities can embed entrepreneurialism on campus. "We are trying to connect deep tech to entrepreneurship to encourage doctoral students with their more research-orientated start-up ideas," Kramer said.

There is a need for deep engagement and clearly defined goals between parties engaging with innovation from differing perspectives – the academic and the commercial. Both are essential to the commercialisation of deep tech. "This is where academic independence is so important," Rocholl said. "It is really important to come up with independent insights that are not biased by monetary considerations but by pure evidence-seeking. And on the industry side, it allows for the question of how it can be translated into something that is relevant and can have impact."

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