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GERMANY ACADEMIC SALON 2021 REPORT

KEYNOTE SPEAKERS AND DISCUSSIONS

Innovating in the digital age for a stronger, greener recovery

THE PANEL
Phil Baty chief knowledge officer, *Times Higher Education* (moderator)
Charlotte Coles senior content manager, *Times Higher Education* (moderator)
Wolfram Ressel rector, University of Stuttgart

The theme of the Huawei Germany Academic Salon 2021 was "rethinking innovation for a stronger, greener recovery", and discussions examined how academic-industry collaboration across Germany could support a sustainable and resilient economy.

The salon opened with a discussion about digitisation and the sustainable society. The evolution of digital technology presents society with an opportunity to embrace a more sustainable future. But to fully realise its potential, scientists must address the social implications of digitisation, argued Wolfram Ressel, rector at the University of Stuttgart.

"We have to explain how it works... What can it help?" Ressel said. "We have to discuss it with society so that they really understand what we are doing. It is very important that we understand each other, because we have common systems. We have to speak about ethical and social challenges, of course, and with data, we need to explain in terms of ethical and social challenges."

> *We have to discuss [digitisation] with society so that they really understand what we are doing*
>
> **Wolfram Ressel**

Artificial intelligence (AI) could be embedded in new computational methods that help humanity glean insights from the huge amounts of data being collected. This, however, poses an ethical question with regard to self-determination, and reliable AI is key to building trust in new systems. Ressel explained that AI needed to be taught in schools to address the implications of such cutting-edge research.

Addressing these issues was crucial. The construction industry uses 40 per cent of the world's resources, and integrative computational approaches were needed to transform the industry. "We will have 2.6 billion more people on Earth [in 35 years]," Ressel said. "This is why we have to find intelligent ideas and an intelligent system for architecture. We need to rethink design and construction, and enable groundbreaking innovations for the building sector."

Ressel outlined the potential of software-defined manufacturing, biotech, quantum technology and miniaturisation. But, he cautioned, to bring new technologies to society, it was vital to foster deeper collaborations between industry, academia and government.

Can technology drive a sustainable future?

THE PANEL
Charlotte Coles senior content manager, *Times Higher Education* (moderator)
Michael Yang chief representative of the Berlin office, Huawei

Digitisation is already affecting our lives, but its potential lies in securing our future. Addressing delegates at the salon, Michael Yang, chief representative at Huawei's Berlin office, described how digital technologies could underpin a more sustainable and connected society.

He spoke of a low-carbon, intelligent world. "We will enter a new phase of digital power," Yang said. "Residency buildings will be energy-efficient, and electrical vehicles with autonomous driving will be able to transfer supplies on the road." Yang reaffirmed Huawei's commitment to research, with the company planning to invest $100 billion (£75 billion) in the next five years and working with universities to develop industry-relevant curricula.

Society is already enjoying the benefits of 5G in areas such as healthcare and energy, Yang said. In Thailand, healthcare providers used digital technologies to accelerate Covid-19 diagnoses. Clean energy is used in thousands of German households already. Floating solar parks, like that of Zwolle in the Netherlands, offer a model of how Huawei can work with governments to help implement sustainable civil engineering projects, and how a "bits manage watts" approach can use digitisation to provide sustainable energy.

> *We will nurture the new technologies more actively and adapt to a rapidly changing digital world*
>
> **Michael Yang**

Yang said Huawei supported the European Commission's digital strategy and its provision and development of digital infrastructure. "Within Europe, we need more innovation to bring new products to the market faster," Yang said. "We will nurture the new technologies more actively and adapt to a rapidly changing digital world."

Low-energy processes, green packaging and a circular economy would underpin the digital economy's sustainability. "Sustainable development requires a digital infrastructure," Yang said. "It is the engine of social progress."

Is globalisation harming innovation?

THE PANEL
Francesca Biagini vice-president, international affairs and diversity, Ludwig Maximilian University of Munich
Laura Marie Edinger-Schons vice-president, sustainability and information provision, University of Mannheim
Jens Schneider vice-president, transfer and international affairs, Technical University of Darmstadt
Beate Schüking rector, Leipzig University
Ben Upton Europe reporter, *Times Higher Education* (moderator)

Globalisation and the collaboration and competition that it stimulates is a net positive for the research community, agreed panellists at the session on rethinking the age-old rhetoric that globalisation fuels a culture of innovation. Many of the biggest challenges facing society are global, and they require global solutions, with international perspectives critical to driving innovation in areas such as climate science, sustainability and the circular economy. But there is an inherent tension between the benefits of globalisation and the potential costs. The present model could be improved to better support local research initiatives, helping nations retain academic talent and develop innovative entrepreneurial hubs.

Francesca Biagini, vice-president of international affairs and diversity at Ludwig Maximilian University of Munich, said there was a balance to be struck between globalisation and the support of local research initiatives. "We still see global competition as productive and stimulating," Biagini said. "At the same time, there are some dangers in globalisation. One is that we need to respect and to foster and protect local activities. We need an adequate protection of intellectual property rights, and also to be aware of some dangers coming from globalisation like a globalised research agenda."

> *There are some dangers in globalisation…We need to respect and to foster and protect local activities*
>
> **Francesca Biagini**

Laura Marie Edinger-Schons, vice-president of sustainability and information provision at the University of Mannheim, agreed, noting that global competition can threaten local research, particularly in fields where a nation does not enjoy a comparative advantage. The question of globalisation required a fundamental rethinking of the university's teaching model.

"As universities, we really have to change our mindsets and our mental models of how we approach teaching and learning," Edinger-Schons said. "In the future, we should really rethink our roles in society as being a platform for innovation, bringing different stakeholders together to have collective impact. We should have the ability to adopt new digital innovations and to use them to enhance learning experiences. We should actively design a future university that is enhanced by digital technology."

The panel acknowledged the scale of challenges such as climate change and the Covid-19 response and recovery. These could not be undertaken by one nation acting alone, and yet national interests and protectionism threatened a cohesive global response.

If the power of globalisation is to be harnessed, academia needs to find new models of innovation. Jens Schneider, vice-president of transfer and international affairs at the Technical University of Darmstadt, said Europe had a great opportunity to maintain diversity and innovation in its research sector. At Darmstadt, there is in place a strategy to use the university as a platform to merge science with economy, civil society, politics and culture, and to present and develop technological innovations with the feedback and input of all sectors of society.

> *We should have the ability to adopt new digital innovations and to use them to enhance learning experiences*
>
> **Laura Marie Edinger-Schons**

"We also need the pull from society to discuss these issues," Schneider said. "Our professors need to come out of their silos a little more to discuss this with society. They need help to do so. This is key." Schneider expressed frustration with the current regulatory framework for supporting start-ups, arguing that they were a barrier to innovation that often took years to overcome.

Beate Schüking, rector at Leipzig University, where there is a strong start-up culture, agreed with Schneider. "The word is 'freedom'," she stressed. "We really need more freedom to implement the necessary framework for our young scientists. We have to get rid of some of these restrictions. We are Germans, so we are doing things very thoroughly, but we also have to think in terms of freedom."

Powering Europe's digital sovereignty

THE PANEL
Malte Brettel vice-rector, industry and business relations, RWTH Aachen University
Filipe de Castro Soeiro president, XU Exponential University of Applied Sciences
Charlotte Coles senior content manager, *Times Higher Education*
Rosa Ellis rankings reporter, *Times Higher Education* (moderator)
Thomas Fetzer vice-rector, structural and development planning, internationalisation and equal opportunities, University of Mannheim
David Wang president, global government affairs, Huawei Germany

The European Commission's digital strategy covers many provisions for the pursuit of new technologies and innovation in fields such as artificial intelligence and high-performance computing. But its pursuit of digital sovereignty – defined as Europe's ability to act independently in the digital world – reflects how digital transformation is as much a cultural paradigm shift as it is technological.

Discussing some of the issues adjacent to Europe's digital sovereignty, academic leaders attending the salon argued that the effective regulation of property rights and data could help underpin innovation. In many respects, Europe is not unique in facing legal and ethical implications of new digital technologies; across the world, the pace of digitisation is placing pressure on policymakers and industry. It is clear that research into new technologies needs to be complemented by a framework that is informed by social sciences so they may have an optimum impact on society.

Thomas Fetzer, vice-rector of structural and development planning, internationalisation and equal opportunities at the University of Mannheim, stressed the importance of governance in digital sovereignty. "We might develop the greatest technology in the world, but if it is not accepted in society by policymakers and decision-makers, we are going to go nowhere," he said. Fetzer cautioned against the European Commission or governments taking a top-down approach. Dialogue between stakeholders was key in determining how society might use digital technologies.

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> **Thomas Fetzer**

Filipe de Castro Soeiro, president of XU Exponential University of Applied Sciences, acknowledged the difficulties in trying to keep pace with the boom in big data. How society decides to handle all this information is a question complicated by differing international standards. "We need commonalities and purposive approaches," de Castro Soeiro said. "The role of the universities is to be a technological core of innovation of technology and life cycle discussion. Education, applied research and prototyping purposive innovation projects will be very important."

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>
> **Filipe de Castro Soeiro**

David Wang, president of global government affairs at Huawei Germany, said digital sovereignty was not just a political initiative. Digital sovereignty requires good infrastructure and the support of industry. "We also need to reach a talent pool," Wang said. "The professors mentioned innovation, and innovation as a solution needs top talent." From an industry perspective, Wang said, clear rules were vital and should be designed to safeguard an open and competitive market. "Competition will drive this industry," he said. "Make sure the rules are clear for everybody to make Europe an attractive destination for talent to start their careers, or for investors to put their money into the market."

Investors in the tech market are finding ways to generate value for consumers, but they need support. Universities can help fill skills gaps, building systems of competence and open models of teaching that use extant technology to broaden students' knowledge base and skills.

Malte Brettel, vice-rector of industry and business relations at RWTH Aachen University, said a rules-based system, informed by social sciences, was invaluable for informing a technologist's perspective. "If we look at today's world, in Germany, we have a production footprint which is still about 25 per cent of GDP," he said. "If we understand the digital shadow of our production facilities, value chains and supply chains, how can we better guide them? We need to go into a more sustainable future and try to understand the carbon footprint of these value chains, and this is only possible if we have the data." Data would be an invaluable resource for researchers, helping them produce simulations, and partnering with industry in developing more ecological materials.

DIGITAL SOVEREIGNTY

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