

# INNOVATION, ENTREPRENEURSHIP & SOCIETY

Our aim is to understand, inform and co-create  
innovation and entrepreneurship in a rapidly changing,  
globally interconnected digital economy & society.



## RESEARCH FOCUS

The aim of the Innovation, Entrepreneurship & Society (IES) Group is to research, inform and co-create innovation and entrepreneurship in a rapidly changing, globally interconnected digital economy and society. The group was formed based on three years of action research within HIIG's Startup Clinics, followed and supplemented by sector-specific research projects on topics such as digital transformation processes, artificial intelligence, digital platforms and the future of work. Building on this legacy, our current work is clustered in four research areas, in which we investigate the mechanisms and enablers of digital innovation and entrepreneurship at different levels of analysis.

## RESEARCH APPROACH

In line with [HIIG's mission](#), we aim to pioneer interdisciplinary research and promote unconventional approaches in the area of innovation, entrepreneurship and society. We conduct theoretically grounded research and seek to co-create societal and economic value together with businesses, policymakers and the public. To achieve this, we also develop novel research approaches and use new technologies and methodologies. Our work is participatory and collaborative, ensuring that joint learning and knowledge transfer happen continuously and consistently. This approach helps us keep up with the volatility, complexity and dynamism of the digital economy.

We acknowledge that digital innovation and entrepreneurship can only be successful if the legal, societal and political challenges are identified and incorporated at an early stage, as they might affect economic and technological developments. This is where IES works closely with [HIIG's Research Programmes](#), leveraging their expertise in domains such as privacy, governance, online learning, regulation, internet security or European law.

## FOUR AREAS OF RESEARCH:



### 1. DIGITAL TECHNOLOGIES & VALUE CREATION

The first research area investigates how organisations create economic and social value using digital technologies and artificial intelligence. It analyses how innovative formats and methods can be used to transfer knowledge successfully between research and business? Some research questions include:

- How do organisations and users create value through digital technologies, and how can individual actors capture their fair share?
- How do organisations design and innovate digital, data-driven and platform-based business models?
- What kind of knowledge do digital entrepreneurs and SMEs require?
- How can enterprises position themselves at the centre of digital innovation processes?
- What challenges do SMEs and large multinational corporations face when striving for digital business model innovation and AI applications?

### Current research projects:

[Gemeinsam Digital – SME 4.0](#), funded by the Federal Ministry of Economics and Energy (BMWi), examines, among other things, the challenges SMEs face in developing digital business models and integrating AI applications.

[Artificial Intelligence & Knowledge Work](#) focuses on the use of AI applications in knowledge workers' intraorganisational workplaces. The project is part of the "Artificial Intelligence in the Workplace" focus group of the German Federal Ministry of Labour and Social Affairs.

[Competing and Complementing of New Participatory Platforms within Companies](#), funded by the Hans Böckler Foundation, studies innovative ways of collaboration and participation in firms.

### Selection of completed research projects:

[Demystifying AI](#) explored the entrepreneurial process of AI production in Germany, analysing the German AI startup landscape, interviewing experts in the field, and showing case studies of the business models of three AI startups.

[Internet of Things: Entrepreneurship & eGovernment](#), in collaboration with Cisco, studied the applications and regulatory implications of IoT technologies.

[Digital Innovation in German mid-sized businesses](#), funded by HypoVereinsbank, studied different companies and their approaches to digital innovation.

### Key publications

- Dopfer, M., Fallahi, S., Kirchberger, M., & Gassmann, O. (2017). Adapt and strive – How ventures under resource constraints create value through business model adaptations. *Creativity and Innovation Management*, 26(3), 233–246. [Publication details](#)
- Gümüşay, A.A., & Dobusch, L. (2020). This is not (digital) business as usual. *MIT Sloan Management Review*. [Publication details](#)
- Richter, N., Jackson, P., Schildhauer, T. (2018). *Entrepreneurial Innovation and Leadership – Preparing for a digital future*. Cham, Switzerland: Palgrave Macmillan. [Publication details](#)
- Richter, N. & Schildhauer, T. (2016). Innovation, Gründungskultur und Start-ups made in Germany. *APuZ*. [Publication details](#)
- Sauer, R., Dopfer, M., Schmeiss, J., & Gassmann, O. (2016). Geschäftsmodell als Gral der Digitalisierung. In O. Gassmann & P. Sutter, *Digitale Transformation im Unternehmen gestalten* (pp. 15-26). München, Deutschland: Hanser Verlag. [Publication details](#)
- Schmeiss, J., & Friederici, N. (2019). Understanding 'AI Made in Germany.' Delphi - *Interdisciplinary Review of Emerging Technologies*, 2(2), 87–94. [Publication details](#)
- Schmeiss, J., Stephany, F., & Tech, R. (2019). The Business Model as Mediator during Socio-Technical Transitions – Empirical Evidence from Applied AI Technology Startups in the Energy and Transportation Sector. *SocArXiv*.



## 2. COLLABORATION & OPENNESS

IES's second research area seeks to understand how diverse actors can collaborate productively and across boundaries. In the digital economy, it becomes possible for previously distinct and distant actors to work together. Yet, new challenges are arising as well. We see them, for instance, when different organisational cultures clash or traditional firms have to fundamentally adapt the way they do business. We address questions such as:

- What opportunities and challenges arise from open source and open innovation?
- What does customer-centric and customer-driven innovation look like in sectors that are being digitalised?
- How can startups effectively collaborate with communities and established companies?
- What role do intermediaries like corporate accelerators or innovation labs play in facilitating digital innovation?

### Current research project:

[Open!](#), funded by DFG and the EU, examines the potential of open source hardware for business model innovation and how companies could implement open source principles in their daily routines.

### Selection of completed research projects:

[How to Collaborate with Startups?](#), in collaboration with Spielfeld, developed a novel methodology to connect startups and SMEs.

[User Innovation in Smart Energy Technologies](#), in collaboration with innogy, studied how users and communities drive innovation in the German energy market.

[Outsourcing Creativity](#) examined corporate accelerators as a particular channel for open innovation.

### Key publications

Friederici, N. (2018). Grounding the dream of african innovation hubs: two cases in kigali. *Journal of Developmental Entrepreneurship*, 23(02), 1850012. [Publication details](#)

Gümüşay, A.A. 2018. Commentary: Sharing is caring: From material to socio-material sharing. *Academy of Management Discoveries*. 4:3, pp. 376-377. [Publication details](#)

Jackson, P. & Richter, N. (2017). Situational Logic: An Analysis Of Open Innovation Using Corporate Accelerators. *International Journal of Innovation Management*, 21(7), 1-21. [Publication details](#)

Neumann, E.K., Send, H., Tech, R.P.G. (2017). Central components of open business models. What makes an open business model open? *HIIG Discussion Paper Series*. [Publication details](#)

Richter N., Jackson P., Schildhauer, T. (2018). Outsourcing creativity: An Empirical Study of Open Innovation using Corporate Accelerators in Creativity and Innovation Management. *Creativity and Innovation Management*, 27(1), 1-10. [Publication details](#)

Schmeiss, J., Hoelzle, K., & Tech, R. P. (2019). Designing Governance Mechanisms in Platform Ecosystems: Addressing the Paradox of Openness through Blockchain Technology. *California Management Review*, 62(1), 121–143.

Wrobel, M., Schildhauer, T., & Preiß, K. (2017). Kooperationen zwischen Startups und Mittelstand. Learn. Match. Partner. Study of Humboldt Institute for Internet & Society. [Publication details](#)



### 3. PLATFORMS & ECOSYSTEMS

Digitalisation is also changing innovation and entrepreneurship at the structural and systemic level. In our third research area, we analyse some of the processes within the platform economy and the ecosystems that make up the digital economy, tackling questions such as:

- What types of markets and networks do technological platforms enable? What are the opportunities for diverse actors (e.g. multinational corporations and SMEs) that are increasingly being coordinated through platforms?
- How are new paradigms of the digital economy, such as platform capitalism and the sharing economy, impacting traditional economic actors, structures and business models? What are the risks, opportunities and alternatives?
- How does the global digital revolution intersect with the specific context and the diverse stakeholders of urban economic development?
- What levers do policymakers have to bring about fairer digital innovation and entrepreneurship outcomes at the national, regional or city scale?

#### **Current research projects:**

[Platform Alternatives](#), funded by the Hans Böckler Foundation and implemented jointly with the Oxford Internet Institute, analyses the structural effects of large American platforms and the strategies of their European competitors. The project develops corporate governance principles for digital platforms that seek to distribute collectively created value more fairly.

[Data Cooperation Platforms for SMEs](#), funded by the Federal Ministry of Finance, is exploring the extent to which small- and medium-sized enterprises are able to establish and use digital platforms. It discusses the conditions for successful cooperative governance models for SMEs, especially in data-intensive markets.

#### **Selection of completed research projects:**

[Germany's National Innovation System](#) offered insights into the relevance of entrepreneurship for a national innovation system and illustrated pathways to encourage entrepreneurial behaviour and startups.

Based on [data collected during Startup Clinics](#), we also analysed supporting and hindering factors for internet-enabled startups in Berlin.

### Key publications

- Dopfer, M., Grafenstein, M., Richter, N., Schildhauer, T., Tech, R., Trifonov, S., & Wrobel, M. (2015). Fördernde und hindernde Faktoren für Internet-Enabled Startups. (Supporting and Hindering Factors for Internet-Enabled Startups.) [Publication details](#)
- Foster, C., Graham, M., Mann, L., Waema, T., & Friederici, N. (2018). Digital Control in Value Chains: Challenges of Connectivity for East African Firms. *Economic Geography*, 94(1), 68–86. [Publication details](#)
- Friederici, N., Meier, P., & Gümüşay, A.A. (2020). An opportunity for inclusion? Digital platform innovation in times of crisis. *Pioneers Post*. [Publication details](#)
- Friederici, N., Wahome, M., & Graham, M. (2020). *Digital Entrepreneurship in Africa: How a Continent Is Escaping Silicon Valley's Long Shadow*. The MIT Press. [Publication details](#)
- Hebing, M., Ebert, J., & Schildhauer, T. (2017). Startup Ökosysteme. Berlin: HIIG. Retrieved from [Publication details](#)
- Iacob, N., Friederici, N., & Lachenmayer, J. (2019). Operationalising relational theory of entrepreneurial ecosystems at city-level in Africa, Asia and the Middle East. *Zeitschrift Für Wirtschaftsgeographie*, 63(2–4), 79–102. [Publication details](#)
- Jackson, P., Runde, J., Dobson, P., & Richter, N. (2015). Identifying mechanisms influencing the emergence and success of innovation within national economies: a realist approach. *Policy Sciences*, 1-26. [Publication details](#)
- Lehdonvirta, V., Park, S., Krell, T., & Friederici, N. (2020). Platformization in Europe: Global and local digital intermediaries in the retail, taxi, and food delivery industries. Humboldt Institute for Internet & Society, Oxford Internet Institute. [Publication details](#)
- Richter, N., Jackson, P., & Schildhauer, T. (2017). Entrepreneurship und Nationaler Wohlstand – Warum Deutschland mehr für seine Gründer tun muss. HIIG Discussion Paper Series. [Publication details](#)
- Von Richthofen, G., & Fischer, E. (2019). Airbnb and hybridized logics of commerce and hospitality. In Russell W. Belk, G. M. Eckhardt, & F. Bardhi (Eds.), *Handbook of the Sharing Economy* (pp. 193-207). Cheltenham (UK): Edward Elgar Publishing Limited.



## 4. DIGITAL SOCIAL INNOVATION & ENTREPRENEURSHIP

In the “Digital Social Innovation & Entrepreneurship” research project, we investigate entrepreneurial organisations that primarily focus on society – often called social enterprises. We look at the role of digital technologies in resolving social and environmental challenges and in creating societal value. We also examine how organisations with societal aims can succeed in shaping a digital, inclusive and sustainable transformation.

We address these topics with research questions such as:

- How can people in the future remain in their established social contexts while their individual lives are supported by technical systems? In this area, we investigate the role of organisations as key actors in a digital, inclusive and sustainable transformation. We are also engaged in a project to establish a Center for Digital Urban Health & Aging (DUHA).
- What characterises digital-social entrepreneurship? In this context we pay special attention to the areas of health, aging and digital cities.
- How are established organisations responding to crises and adapting their fields of activity? How do new initiatives develop new solutions from within civil society?

### Research projects:

[Digital Social Innovation](#) examines the intersection of AI and social entrepreneurship as well as social innovation in response to COVID-19.

[Digital Urban Health and Aging \(DUHA\)](#) is a project to investigate and build a center around the key trends of aging and digitalisation.

[Grand Challenges & New Forms of Organising](#) is a DFG-funded research network that critically examines the relationship between societal grand challenges and new forms of organising.

### Key publications

Friederici, N. (2019a). Hope and Hype in Africa's Digital Economy: The Rise of Innovation Hubs. Digital economies at global margins, 193–222. MIT Press, IDRC.

Friederici, N. (2019b). Innovation Hubs in Africa: What Do They Really Do for Digital Entrepreneurs? Digital Entrepreneurship in Sub-Saharan Africa—Challenges, Opportunities and Prospects, 9–28. Palgrave Macmillan.

Friederici, N., Wahome, M., & Graham, M. (2020). Digital Entrepreneurship in Africa: How a Continent Is Escaping Silicon Valley's Long Shadow. The MIT Press. [Publication details](#)

Gümüşay, A. A. (2018). Hybrid Organizing in the face of grand challenges. *The Business of Society*, [Publication details](#)

Gümüşay, A. A. (2018). Unpacking entrepreneurial opportunities – an institutional logics perspective. *Innovation: Organization & Management*, 20(3), 209-222.

Gümüşay, A.A., Haack, P. (2020). Tackling COVID-19 as a grand challenge. [Publication details](#)

Mair, J., Wolf, M., & Seelos, C. (2016). Scaffolding: A Process of Transforming Patterns of Inequality in Small-Scale Societies. *Academy of Management Journal*, 59(6).

Wolf, M., Ioan, A. (2020). Social Purpose Organizations and Digitalization: Towards an Inclusive and Sustainable Transformation. Zenodo. [Publication details](#), [Publication details](#)

Wolf, M., & Mair, J. (2019). Purpose, Commitment and Coordination around Small Wins: A Proactive Approach to Governance in Integrated Social Enterprises. *Voluntas*, 30(3), 535-548.

## CONTACT



Prof. Dr. Dr. Thomas Schildhauer studied computer science at the Technische Universität Berlin (TU) and holds PhDs in the fields of software marketing, information management and public health. He led the software development and merchant support of a software company of the Bertelsmann AG. From 1986 to 1990 he acted as software developer, sales manager and then managing director of a mid-sized software company. From 1990, Prof. Schildhauer led Lufthansa Informationstechnik and Software GmbH as managing director for seven years.

From mid 1996 to 2000, he worked as a professor with a focus on business management and marketing at the University of Applied Sciences in Eberswalde. From 1999 to 2002, he taught international marketing and telematic at the University of Applied Sciences in Wildau. In 2002 Prof. Schildhauer was appointed professor at the Berlin University of the Arts holding the chair for electronic business with a focus on marketing.

From 2000 to 2018 Prof. Schildhauer worked as a university lecturer at the University of St. Gallen. He also worked on research projects at MIT in Boston and at UC Berkeley, California. In 2003 and 2012, Prof. Schildhauer worked as a visiting professor at the Edith Cowan University in Perth.

Since 2012, Prof. Schildhauer has been one of the executive research directors of the Alexander von Humboldt Institute for Internet and Society gGmbH, where he is responsible for the research topic 'Internet based innovation' and for the Innovation, Entrepreneurship and Society Research Group (IES). Since 2017, Prof. Schildhauer has been Principal Investigator of the Einstein Center for Digital Future and for the Weizenbaum Institute - The German Internet Institute.

In the field of science Prof. Schildhauer authored many national and international publications, e.g. the 'Lexikon of Electronic Business' published by the Oldenbourg Verlag and the 'Social Media Handbuch' published by the Nomos Verlagsgesellschaft.

**POSITION**  
Director

**CONTACT**



Dr. Ali Aslan Gümüşay holds a dual appointment as Head of the Innovation, Entrepreneurship & Society Research Group at the Humboldt Institute for Internet and Society (HIIG) and as Senior Researcher at the University of Hamburg. He is also the principal investigator of the DFG network "Grand Challenges & New Forms of Organizing".

Before this, Dr. Gümüşay was a DAAD PRIME Fellow and Lecturer at Magdalen College, University of Oxford. He received his DPhil from Saïd Business School, University of Oxford. Prior to this, he worked as a strategy consultant for the Boston Consulting Group.

At HIIG, Dr. Gümüşay coordinates projects related to digital innovation and entrepreneurship. This includes work on (social) digital entrepreneurship, platforms, AI, digital transformation, and open innovation. His own research consists of four streams: values, meaning & hybridity in entrepreneurial settings; grand challenges, innovation & new forms of organizing; societal complexity & engaged scholarship; and digitalization, AI & the future of work/leadership.

Dr. Gümüşay's work has been published in outlets such as Academy of Management Journal, Academy of Management Perspectives, Business & Society, Innovation: Organization & Management, Journal of Business Ethics, MIT Sloan Management Review and Research Policy.

### **POSITION**

Head of Research Group: Innovation, Entrepreneurship & Society

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