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## Editorial



Dear Sir or Madam,

The interest in international networking with us and our research is increasing. In April 2023, I was able to welcome colleagues from Cape Town and Sao Paulo to the Chair of Information Systems, especially Processes and Systems (LSWI). This year, we will further deepen our teaching and research collaborations with Brazil, Israel, South Africa and the USA, which I am very pleased about.

Prof. Dr.-Ing.  
Norbert Gronau

Best Regards 

## Teaching position at the University of California, Davis

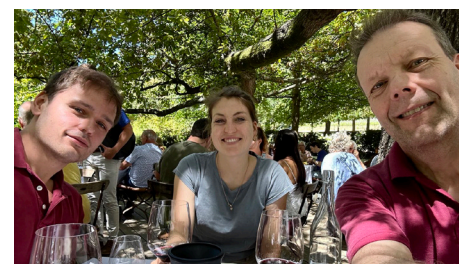


In winter 2022, Dr. Benedict Bender and Dr. Marcus Grum held a seminar on Platforms and Artificial Intelligence in the Internet of Things and Industry 4.0 Context at the University of California, Davis. The stay was supervised by Prof. Dr. Barbara Linke (Dept. Engineering). This is a contribution to the internationalization of research and teaching.



## Research Fellows at Stellenbosch University South Africa

In February 2023, Malte Teichmann, Marcel Panzer and Jana Gonnermann were in South Africa as Research Fellows. The LSWI and the Research Group Education for the Digital World maintain a close cooperation with the Department of Information Science at Stellenbosch University.



## Doctoral exchange: University of Tel Aviv, Israel and University of Potsdam

The PhD student Marcel Rojahn completed a one-month stay at the Department of Industrial Engineering of Prof. Dr. Joachim Meyer at Tel Aviv University in Israel. During this exchange, he presented his dissertation project thematically and conducted research workshops on the topic of digital platforms.

### Research Group: Software and Platforms

The research group around Dr. Benedict Bender, Adrian Abendroth, Jasmin Fattah-Weil and Marcel Rojahn focuses on multi-sided digital platforms (e.g. iOS, Android, Amazon, Siemens MindSphere). The aim of the research is to increase the competitiveness of companies by means of digital platforms (transaction platforms and innovation platforms) and modern business applications.



### Creative Intensive Processes: An Approach to Modeling Creative Work / Final Dissertation Jennifer Haase

The *ICEP model* for creative work processes consists of four components: Intention, Creation, Evaluation, and Planning. It was developed through an interdisciplinary approach and an ethnographic study and enables the specification of creative business processes in modeling.



### Research Group: Emergent Factory

The emergent factory is an emerging concept in modern manufacturing. Through the use of artificial intelligence and robotics, production is becoming autonomous, more flexible and more efficient. Our research is therefore concerned with how the potentials can be used and leveraged. In teaching, students are likewise taught the fundamentals, requirements and possibilities of emergence.



### Promotion of the Weizenbaum Institute: Self-Assessment Tool for Lecturers

Open data, open source and open innovation are common terms in the corporate context. But how can open processes be identified and designed, especially in the field of (continuing) education? The discourse on open education explores the question of how didactic approaches, so-called „open educational practices,“ can be designed. The research group „Education for the Digital World“ at the Weizenbaum Institute (WBI) for the Networked Society has developed a first prototype for a self-assessment tool for lecturers. This enables teachers to evaluate the openness character under the aspect of participation in teaching and learning processes. In addition, the tool offers recommendations for educational stakeholders on how teaching and learning can be designed to be more participatory. Thanks to the support of the WBI, the first prototype will be further developed into a free, web-based tool with a variety of functions (e.g. integration of personalized feedback through dashboards).



### DFG-funded research project: Cyber-Physical Forgetting

As part of a DFG-funded research project by Dr.-Ing. Marcus Grum, the Center for Industry 4.0 has been significantly expanded so that it will soon be able to investigate complex studies on CyberPhysical Forgetting in the collaboration between humans and machines.



### News from the factory of the future - ZIP4.0

The *ZIP4.0* roller conveyor system now has several additional modules. As a result, the transport system now offers more room for maneuver, e.g. for alternative routes or for positioning workstations and machines. With the physical storage boxes, another useful logistics element is available. It allows the mapping of different buffer and storage scenarios as well as simplified loading and unloading. The extended sensor technology of the dispatcher now allows any position to be approached. A graphical user interface with positions of the plant modules

and workstations allows a quick start or destination input when issuing transport orders. Furthermore, MQTT and a publish-subscribe mechanism are now available. A professional show concept with certain elements, light and video installation makes the experience of our factory of the future even more impressive.



### Research group: Education for the digital world

After a successful evaluation, the Weizenbaum Institute entered the next phase in September 2022. The University of Potsdam continues to be represented at the Institute by the Chair of Information Systems, esp. Processes and Systems with the group "Education for the Digital World". The group focuses on the requirements for designing digital teaching and learning processes and the limits of increasing individualization of education.



### Retail study: Digital platforms in retail

The largest German e-commerce companies are examined as part of the Retail Study 2023. The differences between platforms and non-platforms are examined and indicators are developed as to whether it is profitable for retailers to expand to a platform or for companies to sell on platforms. This results in a comprehensive industry picture of the challenges and opportunities.



### Research Group: AI-based Application Systems

Dr.-Ing. Marcus Grum's research group, entitled "AI-based application systems", is concerned with the question of how best to implement, methodically design, systematically generalize and disseminate artificial intelligence in systems such as ERP, control and management, software platforms and production machines.



### ERASMUS+: EDUC+M: EDUCating for Positive Management

As part of the European university alliance "European Digital UniverCity" (EDUC) and with the financial support of Erasmus+, the Chair of Information Systems, esp. Processes and Systems (LSWI) is offering the course "Management in the digital age" again this summer semester. The course introduces the basics of management in the digital age. The aim of the course is to prepare prospective middle and senior managers for the world of work, especially in the private sector, in the digital age. To this end, the differences in value creation between the real and digital worlds will be discussed and the connection to sustainability aspects will be shown. In addition to the practical case studies, a business game developed by the partner chair PUMA will also be integrated into the curriculum this year. As part of the "EDUCating for Positive Management" (EDUC+M) project, an "EDUC+M Sustainable Management Event" will also take place in Paris from May 30 to April 1, 2023. There will be exciting workshops and lectures to present and discuss both the results from the three-year project and suggestions for sustainable higher education. All interested persons from science, business and politics are cordially invited to the event.



### BMBF Project: Mobile Fablabs: WI+R Verbundwerkstatt Lausitz



The two-year MoFab project, funded by the BMBF, is gradually coming to an end. The Chair of Information Systems, esp. Processes and Systems (LSWI) was able to gain a lot of exciting experiences and valuable insights in the areas of Open Production, citizen participation and the development of socio-technical innovations. In total, over sixty DIY formats were implemented in the form of workshops, lectures, repair cafés and an open hardware exhibition, reaching more than 3000 people from Lusatia. LSWI also participated in the first Open Hardware Forum in March 2023 in Berlin and moderated the thematic workshop on Open Science Hardware. The first research results from the project will be presented at this year's ECIS 2023 in Norway.



### Research project approved: Digital platforms to improve decision-making in companies

In the recently approved research project *Open Data for SMEs*, the digital platforms and software systems research group is investigating approaches to improve operational forecasts by incorporating public data sources. In addition to conceptual results, the publication of a prototype is planned.



### Research Project: Machine Learning Methods in the Context of Process Mining

The goal of the ZIM joint project around Dr.-Ing. Marcus Grum, Marcel Rojahn and KRALLMANN AG, Berlin is the development and expansion of intelligent process mining approaches. In this process, business processes are analyzed intelligently in order to uncover hidden problems, for example, and to provide recommendations for process improvement in real time.



### Completion: Virtual Reality / Augmented Reality Lab

During the fourth quarter of 2022, the *virtual and augmented reality lab* was completed, including tower computers for precise modeling of sophisticated 3D models and a selection of advanced virtual and augmented reality glasses from different manufacturers. Researchers also have access to advanced eye trackers to explore various use cases.



### Makerspace at the chair: Integration of teaching, research and application

In the winter semester 23/24, the *Creative Lab* (WICL) will be opened at the Chair of Information Systems, esp. processes and systems (LSWI). The goal is to create a space for result-free tinkering and experimentation. The focus is on rapid prototypes for the production of artifacts and learning formats. The offer is directed at all employees of the LSWI and all students of business informatics and related disciplines at the University of Potsdam.

In the context of teaching, a module is currently being developed that supports students in developing change agent skills. For this purpose, the service learning approach is followed, which builds a bridge between science and practice. These skills include an understanding of models of science for Sustainable Development. In addition, makerskills are taught. Students develop rapid prototyping skills using digital production technologies to realistically develop and test results from science and practice and translate them into tangible prototypes for practice partners. Another focus is on understanding activities at the interface of science and practice, especially the transdisciplinary mode. Students work on problems that are identified in collaboration with practice partners. Practice partners are currently being sought for this purpose. This content is intended to empower participants to actively participate in a sustainability-related transformation of society. The content of the format is designed with the participation of the student council.

The scientific aspect focuses on the evaluation of the format in terms of its effectiveness in supporting students in complementing their technical-informatics-based skillset.

The physical infrastructure is a makerspace that is developed in collaboration with the Network of Open Workshops (NOWBB).

Responsible for the implementation is the team of M.Sc. Magnus Busch and M.A. Bonny Brandenburger.



### Chair event: Spring festival full of joy

The second spring festival at the Chair of Information Systems, esp. Processes and Systems (LSWI) was a great success again this year. Numerous staff and students celebrated the beginning of the warm season together. It is always a great opportunity to exchange ideas in a relaxed atmosphere and to strengthen the cohesion at the chair. The party with traditional music, food and drinks have already become an integral part of our chair culture.

### Factory-Innovation: Alarm software testing

In the current *Factory Innovation*, another test in the area of alarm software was successfully carried out and four providers were examined more closely. Not only were the various strengths of the providers identified, but it was also shown that alarm software is becoming increasingly important for effectively monitoring buildings and facilities and minimizing potential security risks.

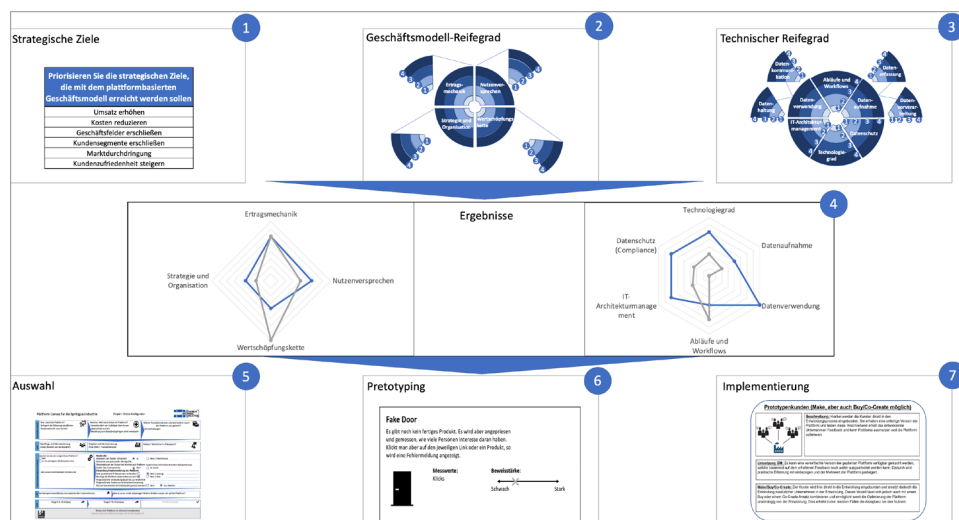


### Teaching project: Concept study: MiniCube

Within this exciting teaching project, students of business informatics used design thinking to develop a prototypical *MiniCube* as a possible variant of a load carrier in ZIP4.0. In doing so, they not only gained insight into the design and implementation of complex technical systems, but were also able to gain valuable insights into the challenges of such development work.

### Research Project Completion: IoT Business Model Evolution

At the beginning of December 2022, the final event of the research project „IoT-BME“ took place at the Zentrum Industrie 4.0 Potsdam together with the research partner International Performance Research Institute (IPRI) and the committee accompanying the project. As a central result, the software tool „Platform-Choice-O-Mat“ was presented, which supports the selection and conception of a platform-based business model for companies in the injection molding industry by providing recommendations for action. Companies are able to evaluate the suitability of platform approaches and the associated benefits based on their individual situation.



### CFP Minitrack @HICSS57: Enterprise Ecosystems: The Integrated Enterprise, Levels of Information Systems Research (Process, Enterprise-, Ecosystem- & Industry-Level)

Together with international partners, the Chair of Information Systems, esp. Processes and Systems (LSWI), with the participation of Dr. Benedict Bender, offers a mini-track at the annual HICSS conference. The track “Enterprise Ecosystems: The Integrated Enterprise” provides a forum for scientific as well as practice-relevant research. The track reflects the practical relevance of our research. Part of the track chair team is Dr. Narasimhan (Product Manager at Google).



### Laying of the foundation stone for the Artificial Intelligence Laboratory of Business Informatics

Dr.-Ing. Marcus Grum has successfully attracted research funding for a DFG grant with ideas for a network of AI-controlled cognitive production systems. Now an AI lab is being set up, which will be equipped with Fischertechnik machine elements to demonstrate AI on the basis of Industrie 4.0 collaborations.

### More flexible route planning in the ZIP4.0 simulation environment

Automated route planning for trips within the transport system is a demanding task for the systems involved, especially in the case of high transport volumes. Current activities aim at implementing route planning or navigation as a modular element. This simplifies the implementation and deployment of different route planning algorithms and enables the selection of the variant that fits the transportation task.

## CURRENT EVENTS

**23|05|23 (Paderborn)**  
**Meeting of the Board of Trustees Heinz Nixdorf Institute (HNI)**  
Participation of Prof. Gronau as a member of the Board of Trustees

**30|05|23 - 01|06|23 (Paris)**  
**EDUC+M Multipler Event (Transnational Meeting)**  
Participation of Prof. Gronau as project participant

**07|06|23 (Berlin)**  
**Berliner Wasserbetriebe 5x5 km TEAM Relay**  
Participation of Prof. Gronau as a member of the running team

**16|06|23 (Hildesheim)**  
**Theme network PE&P**  
Participation of Prof. Gronau as a member

**30|06|23 Großglockner**  
**The LSWI team with Prof. Gronau climbs the highest mountain in Austria**

**21|09|23 Potsdam**  
**Joint Annual Meeting of DGTB and GAT-WU**  
Keynote Prof. Gronau „Work 4.0 - Challenges and solutions for the future of education“.

## IMPRINT

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## Book Announcement of the Chair: Platform-based Business Models

In the first half of the year, a book with results of the research of the Chair for Business Informatics, esp. Processes and Systems (LSWI) is published. At the beginning of May, the management handbook „Platform-based Business Models“ by Dr. Benedict Bender will be published by FAZ-Buchverlag. Readers will gain insights into the possibilities of using platforms as a strategic business model to improve their own competitiveness. By means of their own platform, companies coordinate external value creation, set strategic impulses on the market and at the same time reduce risks of innovations. The book highlights approaches, opportunities and strategic success factors for expanding existing business models with platform-based approaches.



## Do digital platforms offer opportunities for your company?

The new RKW podcast episode: *Successfully Using (Digital) Platforms - Platform Economy in SMEs* focuses on the question of how small and medium-sized enterprises can successfully implement platform-based business models. The new RKW podcast is part of the series *Hightech im Mittelstand*.



**RKW Podcast** • NEUE PODCAST-FOLGE  
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## Competition: ERP System of the Year 20233

The „ERP System of the Year“ competition is the most important ERP award in Europe. This year, for the 18th time, the best ERP providers will be chosen at the Zentrum Industrie 4.0 in Potsdam on September 06, 2023. Register now.

## Auszeichnung der besten ERP-Systeme des Jahres 2023

**Sie haben ein ERP-System?**

Jetzt zum Wettbewerb registrieren und Teilnehmerunterlagen bis zum 5. Juni einreichen.

ERP AWARD