IDEA Workshop Papers
Digitization is the use of digital technologies for creating innovative digital business models and transforming existing business models and processes. Information is captured and processed without human intervention using digital means. Digitization creates profound changes in the economy and society. Digitization has both business and technological perspectives. Digital business models and processes are essential for many companies to achieve their strategic goals.

Digitization impacts the product, customer, and the value-creation perspective. Digitized products are dynamic; their functionality can be extended on the fly by using external services. They are capable of reflecting on their own status and thus morph the selling of physical assets to services. Digitization changes the relationships with the customer significantly. Personal interaction is replaced by self-service and proactive action. The customer interacts with the enterprise using a multitude of implicit touch points provided by the Internet of Things. Digitization fosters new models of value creation such as service-dominant logic. Value is also created by platform and network effects.

The goal of the workshop was to identify challenges from digitization for enterprises and organizations and to advance digital enterprise engineering and architecture to cope with these challenges. The workshop allowed us to identify and develop concepts and methods that assist the engineering and the management of digital enterprise architectures and the software systems supporting them.

To achieve the goals of the workshop, the following themes of research were pursued:

- Methods for the design and management of digital enterprises
- Alignment of the enterprise goals and strategies with the digital enterprise architecture
- Digital strategy and governance
- Architectural patterns for value co-creation, dynamic and servitized products
- Service in digital enterprises
- Business process management in digital enterprises
- Advanced analytics for the support of digital enterprises
- Self-service and automation in digital enterprises
- Customer journeys and relationship management in digital enterprises
- Internet of Things and digital enterprises
- Impact of digitization on society and economy
- Security in digital architectures

In the first paper, “Digitization – Perspectives for Conceptualization,” Rainer Schmidt, Alfred Zimmermann, Selmin Nurcan, Michael Möhring, Florian Bär, and Barbara Keller develop a framework to conceptualize digitization by introducing several perspectives.
Maurizio Giacobbe, Maria Fazio, Antonio Celesti, Tindara Abbate, and Massimo Villari in their paper – “A Scientometric Analysis of Cloud Computing and QoE Literature to Design a Cloud Platform of Experience for Digital Business” – provide some guidelines to digital business companies for addressing the issues related to QoE that have to be taken into account in order to maximize their business.

In “Enabling Digital Transformation Using Secure Decisions as a Service,” Hans-Joachim Hof, Rainer Schmidt, and Lars Brehm introduce a new, secure, and layered architecture that separates the process from the decision model in order to react quickly to changed requirements. It provides flexibility by separating three aspects of decision-making: foundations, methods, and data.

Alexander Smirnov and Andrew Ponomarev collect and analyze all the requirements for crowd computing frameworks that drove the development of these frameworks recently in the paper titled “Exploring Requirements for Multipurpose Crowd Computing Framework.”

In the paper “Adaptive Enterprise Architecture for Digital Transformation,” Alfred Zimmermann, Rainer Schmidt, Dierk Jugel, and Michael Möhring investigate mechanisms for flexible adaptation and evolution for the next digital enterprise architecture systems in the context of digital transformation. The aim is to support flexibility and agile transformation for both business and related enterprise systems through adaptation and dynamical evolution of digital enterprise architectures.

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