

## Digital Economics

The world as we know it today is characterised by complicated, sometimes complex social-technical digital systems, which surround us at every moment. We are integrated in communication networks, computer-mediated social networks, integrated billing and payment system, multi-modal transport systems, smart power grids and many more systems and infrastructures, which aim at effortless support of our modern life. The same interlaced network of integrated service systems can be found in commercial environments, where enterprise resource planning systems, supply chain management system, financial transaction systems and many more have to work together in an interactive, automated or semi-automated way. These digital service economics have grown over several decades now, but they are dynamic and constantly changing. Maturing systems are decommissioned, new systems are added, older systems are revitalised, and additional functionalities are added to existing systems.

The Digital Economics specialisation comprises the courses Service Economics as well as Blockchain Economics. The specialisation thus is concerned about explaining and developing the value creation and distribution of goods and services in existing and future digital economies.

Spring Semester:

### **Service Economics (7,5 ECTS)**

Service economies are becoming more complex as existing service systems are increasingly interconnected. While individuals are paying with their smart phones, watching Internet-TV, or calling friends via voice-over-IP, companies use integrated service systems for business intelligence or orchestrate complicated service sourcing networks with their vendors. Thus, understanding service economies is becoming increasingly crucial for prudent management of emerging service systems. Since new, interconnected service systems have been introduced at an amazing rate in the last decade, society somewhat diverted attention away from evaluating and assessing the resulting impact on service systems stability.

Autumn Semester:

**Blockchain Economics (15 ECTS)**

Blockchain economic systems are still in their infancy but receive a dramatic increase in industrial and academic interest. Start-ups, as well as industry initiatives, are working intensely on blockchain-based innovations, making the technology one of the most promising drivers of innovation in many sectors and industries. However, the design and implementation of blockchain-based systems requires know-how in various areas, as well as mindful consideration of larger economic and societal issues. This course focuses on technological and economic foundations of blockchain economics, as well as complex systems theories, market engineering, strategies and governance of distributed systems, and network effects. Moreover, economic benefits of standards for new types of sharing economies and the Internet of Things will be discussed. A critical reflection of digital determinism as well legal implications will be included as well.