Nowadays service markets are characterized by a strong interrelation with information service management due to the original set-up of service markets.

The overall objective of the module is therefore to provide an **introduction into market engineering with an emphasis on the design and the further development of information markets and services**.

The module enables participants to understand and analyze business innovation and adaptation processes and thus get an idea of, among other things, innovation diffusion. Innovation driver analyses make participants systematically identify the difference between invention and innovation.

Since the structure of information markets is discussed participants are able to develop an **understanding for the action of market actors**. In addition, consideration of service competition as a business strategy helps participants **structure the impacts of service competition on the design of businesses, markets, products, processes, and services**.

**Service Technologies**

This module focuses on two important parts, first the **design and engineering principles behind current networking technologies** and second on **security problems and solutions** identified so far regarding those technologies.

The knowledge imparted on “Advanced Computer Networks” enables participants to **understand the interactions of network components and apply the relevant facts to design principles for current service technologies and networks**. Current modeling and programming languages e.g., HTTP, SOAP or WSDL, explain the architecture of web applications. On the **security part**, fundamentals of cryptography and their applications in complex safety systems are introduced. **Cloud computing concepts and technologies** taught within the module enable the participants to assess the opportunities and challenges of web-scale service applications having in mind the current state of art in IT safety and security.
Digital Services

This module focuses on advanced concepts and methods that are essential in digital service systems and e-applications. Understanding the need for information and knowledge management in businesses, participants of the module are able to implement concepts for modeling, representation, and administration of information and knowledge. Based on the acquired eCommerce-supporting methods and systems, the participants are qualified to select, evaluate, design, and apply these methods and systems according to situation.

A reliable functionality of the networked digital services requires management of complexities. In the specific part of the module, participants get acquainted with the frame conditions of complexity management and, after analysis of the psychological, computer-related, dynamic, and managerial aspects, are enabled to further develop complexity management according to the businesses’ demands. After having learned the meanings of “information” and “pricing”, the participants can develop a differentiated view on the pricing of goods and information goods. Based on a case study of the price elasticity of demand, they develop application and implementation strategies which, in turn, require suitable team & communication skills.

Regulations & Economics of Networks

The fundamental knowledge of communication law supports participants in the adaptation of business strategies to today’s media and information industry is in the focus of this module.

Business Processes & Software Engineering

In business organizations, business process and software engineering are known to be closely linked to one another. The participants in module Business Process and Software Engineering have the ability to effectively and efficiently adapt the particular demands of business processes by means of a technical approach that applies both the tools and methods of business process engineering and of software systems. They obtain a detailed overview of the stages of development of software systems and they are qualified to apply the tools and methods of the development process.

The participants are able to identify and solve relevant problems from the areas of information, data protection, and business law.

In the part “Network Economics”, they implement price models and business strategies as economic concepts reacting to changed market conditions in e.g., the transportation or telecommunications sectors. The participants are qualified to identify and take into account the problems (e.g. “moral hazard” and “adverse selection”) that are linked to contract design.

Overview Engineering Modules (EM)

EM 1: Information & Service Management
Courses: Information & Market Engineering, Service Management & Innovation

EM 2: Service Technologies
Courses: Advanced Computer Networks • Advanced Web Applications • IT Safety & Security • Cloud Computing

EM 3: Digital Services
Courses: Information & Knowledge Management • IT Aspects of eCommerce • Complexity Management • Information Pricing • Service Pricing

EM 4: Business Processes & Software Engineering
Courses: Business Process Engineering • Software Systems Engineering

EM 5: Regulations & Economics of Networks
Courses: Communication Law • Industrial & Network Economics • Economics of Contracts