

**Syllabus for**  
**BIS6234 Service Innovation and Service Science**

Think of your business as a service business

**WS 2021/22**

**Course:** BIS6234E Service Innovation and Service Science

<b>Weekly hours:</b>	2 academic hours: (2 x 45 minutes)
<b>ECTS-Credits:</b>	3
<b>Workload:</b>	90 hours, 30 hours within class and 60 hours for self-study and term project
<b>Time:</b>	Tuesday, 17:15-18:45 (W1.2.04)
<b>Begin:</b>	Tuesday, October 5th, 2021
<b>Level:</b>	Advanced
<b>Prerequisites:</b>	Basic knowledge in Computer Science and Information Systems

**Instructor** Prof. Dr. Peter Weiß

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<https://www.timify.com/de-de/profile/peterweiss/>

Email: [peter.weiss@hs-pforzheim.de](mailto:peter.weiss@hs-pforzheim.de) (preferred mode of communication)

For additional information and further details, please consult the lecturer's personal website at the university.

My aim is to ensure that you succeed in your training. Therefore, I will offer support to your individual learning process and assigned study tasks. In the case of occurring problems or questions, feel free to contact me, for instance by e-mail or arranging a personal meeting with me.

**Overview (catalogue description)**

“All economies are service economies” (Vargo, Lusch, 2014, p. 66-68).

What does this sentence mean? It stands for a mindset which questions some of accustomed business logic and thinking. We see it nowadays in new business models and underlying logics as “car sharing” or so called “no asset” business models. As well many manufacturing companies start offering product-related services and tend to transform their business to offer solutions to their customers instead of mere products. In consequence, manufacturing companies transform into service providers offering solutions instead of mere products. Companies support customers increasingly with their competence and knowledge. Digitization allows new unprecedented way to gather information and data to understand

customer preferences and behaviour. In parallel, customers change their behaviour and preferences due to new emerging digital technologies, namely SMACIT (social, mobile, analytics, cloud, internet of things). As a result, products get more and more connected and enabled to interact with other products to form complex service systems. Hence, digitalization fuels new emerging business logics such as platform-businesses or data-driven business models. At the same time, we can observe disruptions in many established industries. But, what is the essence that we can learn from current developments? How can we explain and understand what is happening around us? If we perceive “car sharing” as a service innovation, and see the offerings of Uber and AirBNB as new compelling value propositions, service innovations and service-led business that bring competitive advantage. As all around us systems are connected and interacting, a collaborative and contextual value creation perspective gains ground. Service puts particular focus on a service ecosystem perspective, on interacting service systems, and foremost on “utility” or “value-in-use” instead of “value in exchange”. All interesting concepts which can help to analyse current developments and to transform companies for their digital future.

The course will explore on related concepts and approaches such as platform-based business models, customer experience and Open Service Innovation. Companies as Uber, AirBNB, General Electric, IBM, KLM, Siemens, Apple, Amazon, Google show how service can make the difference and how companies can act as resource integrator through mobilizing resources using unprecedented network effects and service ecosystems to develop strong relational ties with its customers to support their daily life events and processes. Service motivates a different business logic and questions many of today's established business models.

From a service perspective, what the customer can do with a particular product is vital, in this sense products are only appliances (operand resources) and only a medium to render service. If you buy a car, you can only use it if you have the competence to drive it. Thus, competence, skills, knowledge create competitive advantage, we call them “operand resources”. Service-led business models are relational, contextual, and interactive. In essence that means we have to be focussed on the customer process, we need interactivity with the customer, we have to build strong relationships and our competitive position in the value chain depends on our capacity to understand the customer context to integrate resources (foremost competence, knowledge and skills) to support the customer process with solutions and value propositions. So, if we believe that all this is true, what does this exactly mean, for our future strategy and business models? What is the business advantage for enterprises adopting a service strategy? And how are new emerging digital technologies fuelling this trend allowing new unprecedented value propositions. Companies increasingly compete on service innovations.

This lecture will be provocative and will probably change the way you will see and perceive economic activity and business models in the future.

Service science has emerged as new interdisciplinary frontier field focusing on service and service systems. During the course students get acquainted with theoretical approaches such as Service-Dominant Logic (S-D Logic), which motivates an alternative and diverging view on how value created and determined. While nowadays, companies are dominated by goods-dominant logic centricities, the course will motivate students to develop a different view on value creation activities through analysing the role of goods and developing a broadened view of service systems. The nucleus of the course is S-D Logic and axioms and principles. S-D Logic sees service as the fundamental basis of exchange as well as motivates and explains through its axioms concepts such as co-creation, resource integration and actor-to-actor networks (service ecosystems). S-D Logic claims that all business are service businesses, goods are appliances of service provision and all economies are service economies. Further, the course looks at servitization of manufacturing companies and explains respective transition processes and the required ingredients of service strategies.

Students will learn major theories and approaches to understand how companies can use service to differentiate their offerings from those of their competitors.

### **Prerequisites**

There are no special pre-requisites for the course beyond basics in management and being interested in technological matters. Just, be open minded and curious to learn about the service mindset and paradigm. Do not take the course if you expect to miss more than one class because attendance and active class participation is critical. The course language is English; thus you should be able to follow lectures in English as well as to read state-of-the-art academic literature in English.

### **Learning Objectives**

Service offers companies a mean to escape the commodity trap. Nowadays, digital transformation and digital technologies foster new business logics, e.g. platform-driven or data driven business models. Viewing value creation through a service lens allows us to capture and explain what the new logic is definitely about and are able to adjust and transform the enterprise accordingly. This new logic matches with various attributes and characteristics of service logic. New emerging disciplines as service science and service systems draw from S-D logic axioms and foundational principles.

Upon completion of the course, the students are able to

- name and define the axioms and the foundational premises of Service-Dominant (S-D logic)
- discuss and argue the relevance of related concepts and propositions of S-D logic
- analyze business models and case studies by applying S-D logic concepts
- know and explain concrete examples which illustrate how the S-D logic concepts can be applied in a real life context
- define and conceptualize service innovations on basis of the three elements cocreation, service platform and service ecosystem
- explain and discuss the difference between operant and operand resources
- define service systems and explain what their constituent elements are
- explain what service science means and why it is a transdisciplinary discipline
- know and define value cocreation
- analyze and evaluate business strategies and business models on basis of S-D logic and related service concepts
- analyze use cases to capture and describe underlying business logics and value propositions
- explain and discuss what the difference between goods-dominant (G-D) logic and S-D logic is.
- design and evaluate service strategies and service-led business models by applying S-D logic concepts

### **Course Topics**

- Foundations of Service Management and Engineering
- Service Strategies and S-D logic
- Service Innovation
- Value Co-Creation
- Value Chain Management

- Service Science and Service Systems
- Open Service Business Models
- Open Service Innovation
- Service Innovations in the context of Service Ecosystem
- Service Ecosystems and Service Systems
- Connected Customers and Systems
- Service Platforms
- Case Studies

### Contribution of the course to the program goals of the study program

Program Objectives (PO)		Learning Objective / Outcome	Contribution to learning objectives
PO 1: Responsible leadership in organizational contexts	1.1	Students are acquainted with numerous relevant management principles. They are able to explain and discuss them discerningly.  <i>(„Kenntnis einschlägiger Führungsprinzipien“)</i> (KMK: Wissensverbreiterung)	Discussions within class, Students' questions for voluntary tutorials, Term Project, and/or Written exam
	1.2	Students are able to apply management principles within an organizational context.  <i>(„Fähigkeiten zur Anwendung einschlägiger Führungsprinzipien“)</i> (KMK: Instrumentale Kompetenz)	
	1.3	Students are able to reflect discerningly and critically on diverse management principles within an organizational context.  <i>(„Kritische Reflektion einschlägiger Führungsprinzipien“)</i> (KMK: Systemische Kompetenz)	
	1.4	Students comprehend the challenges of ethics and sustainability for responsible business operations and are able to deal with them.  <i>(„Kompetenz zum verantwortlichen Handeln“)</i>	
PO 2: Creative problem-solving skills in a complex business environment	2.1	Students are able to recognize and define problems as well as assess their importance.  <i>(„Fähigkeit der Problemerkennung / -abgrenzung &amp; -einordnung“)</i> (KMK: Instrumentale Kompetenz)	Discussions within class, Students' questions for voluntary tutorials, Term Project, and/or Written exam

	<p>2.2 Students are able to analyze complex in-company and inter-company problems and challenges from different perspectives and/or within an international context.</p> <p><i>(“Fähigkeit zur Problemanalyse“)</i> <i>(KMK: Instrumentale Kompetenz)</i></p>	<p>Discussions within class, Students’ questions for voluntary tutorials, Term Project, and/or Written exam</p>
	<p>2.3 Students are independently able to develop creative solutions to complex in-company and inter-company problems and challenges.</p> <p><i>(“Fähigkeit zur kreativen Problemlösung“)</i> (KMK: Systemische Kompetenz)</p>	<p>Implications of new management paradigms such as service orientation (mainly S-D logic) and related strategic imperatives to design creative solutions and synthesize concepts to appropriate strategies to (re)position the company in the context of digitalization and digital transformation.</p>
	<p>2.4 Students are successfully able to clarify complex problems and solutions to both experts and laymen.</p> <p><i>(“Fähigkeit zur Problemerläuterung“)</i> (KMK: Kommunikative Kompetenz)</p>	<p>Discussions within class, Students’ questions for voluntary tutorials, Term Project, and/or Written exam</p>
<p>PO 3: Research skills and their practical application</p>	<p>3.1 Students are acquainted with research methods relevant to engineering and management as well as their advantages and disadvantages.</p> <p><i>(„Methodenkenntnis“)</i> <i>(KMK: Wissensverbreiterung)</i></p>	<p>Discussions within class, Students’ questions for voluntary tutorials, Term project, and/or Written exam</p>
	<p>3.2 Students are successfully able to apply research methods relevant to engineering and management.</p> <p><i>(“Kompetenz bei der Anwendung von einschlägigen Forschungsmethoden“)</i> (KMK: Instrumentale Kompetenz)</p>	<p>By following a research-based teaching approach students get acquainted with research methods and approaches. Design Science Research methods are of interest and will be introduced.</p>
	<p>3.3 Students are able to implement relevant research methods in such a way as to deliver reliable and innovative results.</p> <p><i>(„Fähigkeit zur Gewinnung innovativer Ergebnisse mit einschlägigen“)</i></p>	<p>Results and outcomes of research papers will provide insights and understanding how knowledge and innovative results are produced and/or published.</p>

		<i>Forschungsmethoden“)</i> (KMK: <i>Systemische Kompetenz</i> )	
PO 4: Design skills for specific IT management solutions or IT technology management architectures within complex process structures  („Gestaltung spezifischer IT-Management- oder IT-Technologie-Lösungen in komplexen Prozess-Strukturen“)	4.1	Expert Knowledge in IT  („IT-spezifische Fachkenntnisse“ – KMK: <i>Wissensvertiefung</i> )	
	4.2	Application Transfer of Problem Solving Methods for IT-specific Problems  („Fähigkeit zur Anwendung geeigneter Problemlösungsmethoden für IT-spezifische Aufgabenstellungen“) (KMK: <i>Instrumental Kompetenz</i> )	Students will get equipped with new thinking and concepts which can be used and applied to develop solutions for given problems in an industrial context.
	4.3	Critical Analysis and Problem Solving for IT-specific Problems  („Fähigkeit zum Erkennen ursächlicher Probleme für IT-spezifische Aufgabenstellungen und zu deren Lösung“) (KMK: <i>Systemische Kompetenz</i> )	To analyze requirements and to arrive at practical solutions, students learn new concepts and will be acquainted with conceptualizations of solutions designs, to understand that a systems perspective (“purposed systems”) are fundamental for research and practice, respectively.

### Didactic Concept and Learning Approach

The course is organized as a lecture in form of seminar, thus throughout the course special emphasis is met on discussion and interaction with the students. Based upon profound knowledge of theory and its implications during the lecture critical discussions are in focus. This covers discussions concerning current policy topics in technology and innovation management. New paradigms and strategic implications will be discussed. The course introduces to S-D logic, service systems and service-led growth strategies.

In the course, we follow a research-led teaching approach. You will get assigned a topic (scientific paper) that you will prepare to present in class. Together we will learn and explore about the relevant concepts and how they can be applied in real life settings. Based on cases and use cases you will learn about applicability and relevance of presented theoretical concepts to solve some of the problems ahead.

The lecture materials such as slides, case studies and study texts are accessible for students via the e-learning platform (Moodle).

An important part of the learning process is getting feedback. Each group is invited to come to my office during my office hours or based on an individual appointment to get my feedback about the paper and the presentation.

## Course Material

- Chesbrough (2011): Open Service Innovation: Rethinking Your Business to Grow and Compete in a New Era. Jossey-Bass.
- Vargo, S. L. & Lusch, R. F. (2018). The sage handbook of service-dominant logic 55 City Road, London: SAGE Publications Ltd
- Lusch, R.F.; Vargo, S.L.: Service-Dominant Logic: Premises, Perspectives, Possibilities. Cambridge University Press, 2014.
- C. Grönroos, "Service logic revisited: who creates value? And who co-creates?", European Business Review, 20 (4), 2008, pp. 298 - 314.
- J. Spohrer, P.P. Maglio, "Toward a Science of Service Systems", In: P.P. Maglio et al. (eds.), Handbook of Service Science, Service Science: Research and Innovations in the Service Economy, 2010, pp.157-194
- Weiß, P.; Warg, M.; Zolnowski, A. (2019): Building Systems of Engagement to overcome the challenges of digital transformation. Naples Service Forum 2019, 04-07 June 2019.
- Warg, M.; Zolnowski, A.; Frosch, M.; Weiß, P. (2019): From Product Organization to Platform Organization: Observations of Organizational Development in the Insurance Industry. Naples Service Forum 2019, 04-07 June, 2019.

### *Complementary/ Additional Reading/ Case Material (tentative to be completed / updated):*

- C. Grönroos, "Value co-creation in service logic: A critical analysis". Marketing Theory. 11 (3), 2011, pp. 279-301.
- Grönroos, C., Voima, P.: Critical service logic: making sense of value creation and co-creation. Journal of the Academy of Marketing Science 41, 133-150 (2013)
- Grönroos, C.: Service Management and Marketing. Third Edition. John Wiley & Sons, 2007.
- Vargo, S. L. and Lusch, R. F. (2008) 'Service-dominant logic: Continuing the evolution', Journal of the Academy of Marketing Science, 36(1), pp. 1–10. doi: 10.1007/s11747-007-0069-6.
- Vargo, S. L. and Akaka, M. A. (2009) 'Service-Dominant Logic as a Foundation for Service Science: Clarifications', Service Science, 1(1), pp. 32–41. doi: 10.1287/serv.1.1.32.
- J. Spohrer, P.P. Maglio, "The Emergence of Service Science: Toward Systematic Service Innovations to Accelerate Co-Creation of Value", Production and Operations Management, 17 (3), May-June, 2008, pp. 238-246.
- S.L. Vargo, M.A. Akaka, "Value Cocreation and Service System (Re)Formation: A Service Ecosystems View", In: Service Science, Vol. 4 No.3, 2012, pp. 207-217.
- T. Böhmman, J.M. Leimeister, K. Möslin, "Service Systems Engineering - A Field for Future Information Systems Research", Business & Information Systems Engineering, 56 (2), 2014, pp. 73-79.
- Vargo, S. L. and Lusch, R. F. (2004) 'Evolving to a New Dominant Logic for Marketing', Journal of Marketing, 68(1), pp. 1–17. doi: 10.1509/jmkg.68.1.1.24036.
- J. Spohrer, P.P. Maglio, "Toward a Science of Service Systems", In: P.P. Maglio et al. (eds.), Handbook of Service Science, Service Science: Research and Innovations in the Service Economy, 2010, pp.157-194.

In this course, we use scientific papers, case studies published in MIT Sloan Management Review and Harvard Business School Publishing. Some of this papers are only accessible by fees or membership (e.g. AIS conferences and journals). For those papers, we have to pay a license fee and the papers are only issued for strict personal use within the course. You are

not allowed and permitted to use the material for other purposes outside this course and the assigned tasks.

### **Feedback**

An important part of the learning process is getting feedback. Each group is invited to come to my office during my office hours or based on an individual appointment to get my feedback about the paper and the presentation.

### **Course assessment**

The students will prepare and realize a presentation. The results will be discussed in class. Details are outlined during the first sessions in the class room, as well as the applied assessment criteria. Important criteria are presented and will be clarified during the first lectures.

### **Grading**

The grading approach will be discussed during the first lecture.

To get credits for the course it is necessary that the student has to complete all the team assignments and foreseen tasks.

### **Communication**

In support of this course, an e-learning platform (Moodle) will be used which offers several advantages. Firstly, teaching material will be made available via this platform. Secondly, questions that might arise can be discussed among the students through the use of this platform. Finally, general questions can be answered transparently by the lecturer, i.e. all students will be able to see the answers. For specific questions, you may always contact the lecturer in person or via email.

### **Student responsibilities and class behavior**

- **Read the course syllabus**
- Respect each other
- Take responsibility for your action
- Demonstrate professional attitude and professionalism
- Be open and fair
- Act with honesty
- Trust each other
- Demonstrate civility
- Arrive to class on time and do not leave early
- Please let me know in advance if you miss a class
- Demonstrate and respect divergent opinions

### **Preliminary Schedule/assignments for BIS6234E in Winter term 2019/20**

The topics will be the base for your scientific work and successful learning process. The case studies and learning material will be carefully selected to reflect current state of play, existing vantage points and current as well as future developments service science. The list of topics is still tentative, changes can happen. The complete list will be presented at the first class session. Hence, it is important that you attend the first introductory session.

	<b>Date</b>	<b>Term Paper or Class Topic</b>	<b>Case Study</b>
1	<b>Week 1</b>	<b>Introduction/Preliminaries/Organization/Assignments</b>	Overview and materials
2	<b>Week 2</b>	<b>Introductory Cases</b>	
3	<b>Week 3</b>	<b>Service Innovation</b>	
4	<b>Week 4</b>	<b>Service Innovation</b>	
5	<b>Week 5</b>	<b>Service Innovation</b>	
6	<b>Week 6</b>	<b>S-D Logic</b>	
7	<b>Week 7</b>	<b>S-D Logic</b>	
8	<b>Week 8</b>	<b>S-D Logic</b>	
9	<b>Week 9</b>	<b>S-D Logic</b>	
10	<b>Week 10</b>	<b>Service Systems</b>	
11	<b>Week 11</b>	<b>Service Systems</b>	
12	<b>Week 12</b>	<b>Service Systems</b>	
13	<b>Week 13</b>	<b>Case Studies</b>	
14	<b>Week 14</b>	<b>Case Studies</b>	
15	<b>Week 15</b>	<b>Case Studies</b>	
16	<b>Week 16</b>	<b>Case Studies</b>	
17	<b>Week 17</b>	<b>Capstone Session</b>	