

**Syllabus for**  
**BAE3081 Value Chain Management 1**  
**WS 2016/2017**

**Course:** BAE3081 Value Chain Management 1

<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, 15:30-17:00 (T2.4.10)
<b>Begin:</b>	Tuesday, October 4 <sup>th</sup> , 2016
<b>Language:</b>	English; advanced level
<b>Level:</b>	Advanced
<b>Assessment</b>	Exam (60 minutes)
<b>Prerequisites:</b>	Basic knowledge in Computer Science and Information Systems

**Lecturer** Prof. Dr. Peter Weiß

Office hours: Monday, 1 p.m. – 2.30 p.m., W2.2.25, upon appointment

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

My aim is to ensure that you succeed in your training. Therefore I want to provide support. In the case of occurring problems or questions, feel free to contact me, for instance by e-mail. I will answer promptly and if required schedule an appointment.

### **Brief course description**

In today's increasingly "networked" world, individuals and organizations in virtually every industry and sector in the global economy (public, private and non-profit ) are getting involved in new kinds of network-level collaboratives (projects, programs and activities involving collaboration among individuals, groups, organizations and intelligent seeking to achieve a shared goal). The core driver of this collaborative business era is the networked and connected economy, bringing together people, process, data, and things to make networked connections more relevant and valuable than ever before—turning information into actions that create new capabilities, richer experiences, and unprecedented economic opportunity for businesses, individuals, and countries.

This course aims to introduce basic theoretical perspectives and research methods of business networks and their applications for a wide range of networking contexts e.g., virtual organisations, business operations, supplies chains, the Internet of Things, etc., and engineering networks. The students will be exposed to an interdisciplinary body of knowledge involving sciences, engineering, social sciences and business studies. In addition, the students will carry out hands-on exercises, case studies (Open Innovation, Industry 4.0 and Business

Ecosystems), and group projects. At the end of the course, the students will gain not only intellectual knowledge, but also practical skills for scientific inquiry, critical thinking, problem solving, teamwork, and professional presentation to address networking issues. The knowledge and skills will also enable the students to help enhance human experience and life quality in the contemporary networked society.

Case studies will be used to support the theoretical constructs and reinforce learning.

### Prerequisites

There are no special pre-requisites for the course beyond basics in management and being interested in technological matters. Do not take the course if you expect to miss more than one class because attendance and active class participation is critical. As well, please consider that course language is English. Please ensure that you are able to read scientific articles in English and follow the lectures. As well, interventions and contributions from students are expected to be made in English.

### Learning Objectives

Upon completion of the course the students are able to

- Define and characterize various types of networked organizations relating to presented concepts and vocabulary of the course material.
- Name and recall foundational premises and theories explaining value chain management and value chain constellations.
- Define and repeat the concept “value chain management” and describe its strategic and operational aspects as well as its objectives.
- Name and explain current challenges and drivers of change reshaping current value chains.
- Define and classify major constituent properties of service ecosystems and service systems.
- Define and characterise product service systems and transfer how they extend the total offering of companies through new value propositions and integrating service components.
- Define and evaluate the design of platform-based strategies in manufacturing industries.
- Know and propose strategic imperatives and opportunities but as well risks viewing value chains through a service-lens.
- Know and apply concepts to concrete examples and conclude how transformations and improved competitive positions are achievable.
- List and discuss major drivers of change and influencing factors for transformations of value chains.
- Recall and choose appropriate concepts and various perspectives to analyse and evaluate value chain strategies and operations in a given industrial context.
- Combine and integrate various concepts to develop strategies and to prepare decisions concerning design of value chains.
- Understand and argue major drivers of change as well as to characterise potential risks for value chain management.
- Name and conceptualize value chain management concepts derived from S-D logic principles and mechanisms.
- Discuss and argue managerial implications using a service-led strategy as well as options and respective design dimensions to design value chains using a service logic.

- Evaluate and discuss the strategic implications of value chain formation and design for the success of innovative digital emerging business models (e.g. Amazon, etc.).
- Validate strategies for value chain management to overcome current challenges such as digitization and digital transformation using service-oriented or service-led management approaches.

### Course contributions to degree program target

	Learning result	Contribution
1.1	Students demonstrate key knowledge in Technical Basics.	Introduction to and communication of interdependencies between technical and business requirements
1.2	Students demonstrate key knowledge in Mechanical Engineering.	
1.3	Students demonstrate key knowledge in Business Administration.	Introduction to and communication and cross-organisational interaction and also discussions based on expert knowledge, especially of production management.
1.4	Students demonstrate key knowledge in Economics.	Introduction to and communication of globally distributed manufacturing
1.5	Students demonstrate key knowledge in Mathematics.	
1.6	Students demonstrate key knowledge in Quantitative Methods.	
1.7	Students demonstrate key knowledge in Computer Science.	
2.1	Students demonstrate proficiency in using current computer programs to solve business and technical problems.	
2.2	Students demonstrate the ability to use information systems effectively in real world business settings.	
3.1	Students are able to apply analytical and critical thinking skills to complex problems.	The focus is the transformation of limited thinking and dealing confined to traditional management to future networked production systems.
4.1	Students are able to develop business ethics-based strategies and are able to apply them to typical business decision-making problems.	A win-win approach is necessary in order to produce globally. Ethics-based strategies form the basics of this approach
5.1	Students demonstrate their ability to express complex issues in writing.	The students demonstrate their writing know-how through the preparation of a small case study
5.2	Students demonstrate their oral communication skills in presentations and lectures.	The students demonstrate their presentation know-how in small teams.
6.1	Students show that they are able to work successfully in a team by performing practical tasks.	The students demonstrate their presentation know-how in small teams.
7.1	Students demonstrate their ability to develop and present complex interdisciplinary solutions by means of an application oriented assignment.(GM)	With the obtained knowledge about the different approaches the students get a deeper insight into contrary aims from different organisations and will learn a concept on how to handle these conflicting goals.
7.1	For specific cases students demonstrate their ability to understand and design cross-functional as well as cross-company business processes in a global context. (GPM)	The aim is a holistic design and optimization of production challenges across the functional borders of the company and the borders of the value chain.
7.1	Students show that they are able to apply their cross-cultural skills in specific situations.(IM)	Cross-cultural skills in specific situations are the basis for production management in cross-organisational settings.

### Teaching and learning concept

Value Chain Management is an interactive lecture with discussion based on International Business case studies. To participate fully in class, students are expected to attend classes, read the assigned literature / cases and engage in discussion. The lecture is research-led and introduces students with high-level, demanding cutting-edge state-of-the-art scientific literature and articles. Given master level of the course, scientific literature provides the foundations to achieve managerial insights and concepts to be applied to practical problem solving in real world application scenario. Students will learn how scientific literature can be used as source to synthesize own innovative solution designs to evaluated against real life requirements. Students will get acquainted with frontier of current research (concepts, language, results) in the field of service science and systems, organizational ecosystems and value proposition through collaboration (integration of resources) as well as viewing business strategies through a service lense (S-D logic).

### Performance record regulations

Term Project: 30%

Exam: 70%

Total: 100%

After the end of the semester, students will write a **60 minutes exam** on Value Chain Management (English language). Students will be prepared for the exam during the lectures. Also the style of the exam will be explained during lectures.

### Grading

Exam at the end of the semester (60 minutes; ca. 60 points).

- 'Very good' (A grade) signifies that the performance is above and beyond expectations.
- 'Good' (B grade) means that the performance is good and above average.
- 'Satisfactory' (C grade) means that it is an average performance containing insufficiencies but principally appropriate to the expectations.
- 'Adequate' (D grade) describes a below-average performance with obvious deficiencies.
- 'Inadequate' (E grade) is an unacceptable performance that is not sufficient to any expectations.

### Course basic literature (core body of knowledge)

- Introduction to Product/Service-System Design: Sakao, T. and M. Lindahl, Eds. (2009).. London. Springer. Springer Publishing.
- Collaborative network: L.M. Camarinha-Matos, H. Afsarmanesh (2008). Collaborative Networks: Reference Modeling. Springer.
- Open Innovation: Chesbrough, H.; Vanhaverbeke, W.; West, J., eds. (2008). Open Innovation: Researching a New Paradigm. Oxford University Press.
- Peter Gloor (2005) Swarm Creativity: Competitive Advantage Through Collaborative Innovation Networks.

- Networked Society: <http://ioeassessment.cisco.com/>, last visit 19 August 2016.
- Business Ecosystems: A. Neely, I. Visnjic Kastalli (2013): "Collaborate to Innovate. How Business Ecosystems Unleash Business Value".

**Specialized, focused literature (extended body of knowledge):**

- Aurich, J. C.; Wolf, N.; Siener, M.; Schweitzer, E. (2009): Configuration of product-service systems. In: *Journal of Manufacturing Technology Management*, Vol. 20 No. 5, 2009, pp. 591-605.
- Becker, J.; Beverungen, D. F.; Knackstedt, R. (2010): The challenge of conceptual modeling for product-service systems: status-quo and perspectives for reference models and modeling languages. In: *Information Systems and e-Business Management* January 2010, Volume 8, Issue 1, pp. 33-66.
- Eloranta, V.; Turunen, T. (2016): Platforms in service-driven manufacturing: Leveraging complexity by connecting, sharing and integrating. In: *Industrial Marketing Management*, Vol 55 (2016), pp. 178-186.
- Gebauer, H.; Paiola, M.; Sacconi, N. (2013): Characterizing service networks for moving from products to solutions. In: *Industrial Marketing Management*. Vol. 42 (2013), pp. 31-46.
- Gebauer, H.; Ren, G.-J.; Valtakoski, A.; Reynoso, J. (2012): Service-driven manufacturing. In: *Journal of Service Management*, Vol. 23 (1) pp. 120-136.
- Gebauer, H.; Fleisch, E.; Friedli, T. (2005): Success factors for achieving high service revenues in manufacturing companies. In: *European Management Journal* Volume 23 (1), February 2005, pp. 14-26.
- Goda, K.; Kijima, K. (2015): Modeling Service Ecosystem Innovation. In: *Journal of Business and Management Sciences*, Vol. 3 (3), pp. 85-91.
- Greer, R. C.; Lusch, R. F.; Vargo, S. L. (2016): A service perspective: Key managerial insights from service-dominant (S-D) logic. In: *Organizational Dynamics*. Volume 45 (1), January–March 2016, Pages 28–38.
- Lusch, F. R.; Vargo, S. L.; O'Brien, M. (2007): Competing through service: Insights from service-dominant logic. In: *Journal of Retailing*, Vol. 83 (1, 2007), pp. 5-18.
- Mathieu, V. (2001): Service strategies within the manufacturing sector: benefits, costs and partnership, In: *International Journal of Service Industry Management*, Vol. 12 (5), pp. 451-475.
- Oliva, R.; Kallenberg, R. (2003): Managing the transition from products to services", *International Journal of Service Industry Management*, Vol. 14 (2) pp. 160-172.
- Pan, N.P.; Nguyen, H.T.N. (2015): Achieving customer satisfaction through product-service systems. In: *European Journal of Operational Research*, Vol. 247 (2015), pp.179-190.
- Spohrer, J.; Maglio, P. P. (2008): The Emergence of Service Science: Toward Systematic Service Innovations to Accelerate Co-Creation of Value. In: *Production and Operations Management*, Vol.17 No.3, May-June, pp. 238-246.

- Spohrer, J.; Maglio, P. P.; Bailey, J.; Gruhl, D. (2007): Steps Toward a Science of Service Systems. In: *Journal Computer*, Vol. 40 (1), January (2007), pp. 71-77.
- Spohrer, J.; Maglio, P. P. (2010): Toward a Science of Service Sytems. In: In: P.P. Maglio et al. (eds.), *Handbook of Service Science, Service Science: Research and Innovations in the Service Economy*, DOI 10.1007/978-1-4419-1628-0\_10, Springer Science+Business Media, LLC 2010, pp.157-194.
- Spring, M.; Araujo, L. (2013): Beyond the service factory: Service innovation in manufacturing supply networks. In: *Industrial Marketing Management*, Vol. 42 (1), January (2013), pp. 59-70.
- Spring, M.; Araujo, L. (2009): Service, services and products: rethinking operations strategy. In: *International Journal of Operations & Production Management*, Vol. 29 (5), pp.444-467.
- Sydow, J. (1992): *Strategische Netzwerke: Evolution und Organisation*. Gabler, Wiesbaden, 1992.
- Tukker, A.; Tischner, U. (2006): Product-services as a research field: past, present and future. Reflections from a decade of research. In: *Journal of Cleaner Production* 14 (2006), pp. 1552-1556.
- Vargo, S. L; Lusch, R. F. (2004): Evolving to a New Dominant Logic for Marketing. In: *Journal of Marketing*, Vol. 68 (January 2004), pp. 1-17.
- Vargo, S.L; Lusch, R.F. (2016): Institutions and axioms: an extension and update of service-dominant logic. In: *Journal of the Academy of Marketing Science*. January, Vol. 44 No. 1, pp. 5-23.
- Vargo, S. L.; Akaka, M. A. (2012): Value Cocreation and Service System (Re)Formation: A Service Ecosystems View. In: *Service Science*, Vol. 4 No.3, pp. 207-217.
- Vargo, S. L.; Wieland, H.; Akaka; M. A. (2015): Innovation through institutionalization: A service ecosystems perspective. In: *Industrial Marketing Management*, Vol. 44, January, pp. 63-72.
- Wallin, J.; Parida, V.; Isaksson, V. (2015): Understanding product-service system innovation capabilities development for manufacturing companies, In: *Journal of Manufacturing Technology Management*, Vol. 26 (5), pp. 763-787.
- Weiß, P.; Herfurth, M.; Schumacher, J. (2011): Leverage Productivity Potentials in Service-oriented Procurement Transactions: E-Standards in Service Procurement. In: *RESER Proceedings* 2011, Hamburg. [http://www.reser.net/material/priloge/slo/weiss\\_et\\_al.pdf](http://www.reser.net/material/priloge/slo/weiss_et_al.pdf), last visit 01.08.2016.
- Zolnowski, A. (2015): *Analysis and Design of Service Business Models*. Doctoral thesis, Faculty of Informatics, University of Hamburg. Germany, <http://ediss.sub.uni-hamburg.de/volltexte/2015/7469/>, last visit 05.07.2016.

### **My self-perception as lecturer**

My aim is to establish a fundamental comprehension for the common topics in Value Chain Management, especially value networks. As well, I will get students acquainted with new paradigms to view management challenges through the lens of service management and

Service-Dominant (S-D) logic. My aim is to enable students to synthesize solution approaches to typical problems and challenges of networked businesses. My aim is to enable students to follow eclectic research approaches and conceptualize solutions design to improve planning activities that are across functions and process borders in order to pursue the overall optimum instead of a suboptimal company optimum. Therefore I want to encourage students to take a holistic view and service-led view, which may be a competitive advantage towards business partners and competitors (service makes the difference). My lectures are research-led not losing focus concerning essential aspects to apply results in real life industrial contexts. Students on master level are encouraged to use scientific literature and to work with state-of-the-art material and concepts from the emerging trans-disciplinary service science. Service-led thinking and to use service strategies to achieve competitive advantage is a major paradigm of my teaching and research.

### Temporary time schedule

<b>Week 1</b> 05.10.2016 08:00-09:30 W2.2.03	<b>Introduction and Motivation</b> Introduction to course and material Time planning and assignment of tasks (own read and term project)
<b>Week 2</b> 12.10.2016 08:00-09:30 W2.2.03	<b>Value Chain Management (1)</b> Foundations and approaches Concepts and processes Examples and solutions
<b>Week 3</b> 19.10.2016 08:00-09:30 W2.2.03	<b>Value Chain Management (2)</b> Innovative approaches and strategies to SCM SCM strategies and challenges Case studies and examples
<b>Week 4</b> 26.10.2016 08:00-09:30 W2.2.03	<b>Foundations of Collaborative Networks (1)</b> Understand Motivation and Strategies behind Collaborative Networks Classical theories and approaches
<b>Week 5</b> 02.11.2016 08:00-09:30 W2.2.03	<b>Foundations of Collaborative Networks (2)</b> Product-Service-Systems Transformation Product to Solutions Overview of Service-led approaches and theories
<b>Week 6</b> 02.11.2016 08:00-09:30 W2.2.03	<b>Service Strategies and S-D logic (1)</b>
<b>Week 7</b> 02.11.2016 08:00-09:30 W2.2.03	<b>Service Strategies and S-D logic (2)</b>
<b>Week 8</b> 09.11.2016 08:00-09:30	<b>Connected Customers and Systems</b> Internet of Things and Cyper-Physical Systems Industrie 4.0, RAMI 4.0

W2.2.03	
<b>Week 9</b> 16.11.2016 08:00-09:30 W2.2.03	<b>Service Ecosystems and Service Systems (1)</b>
<b>Week 10</b> 23.11.2016 08:00-09:30 W2.2.03	<b>Service Ecosystems and Service Systems (2)</b>
<b>Week 11</b> 30.11.2016 08:00-09:30 W2.2.03	<b>Service Innovations in the context of Service Ecosystem</b>
<b>Week 12</b> 07.12.2016 08:00-09:30 W2.2.03	<b>Case Studies (1)</b>
<b>Week 13</b> 14.12.2016 08:00-09:30 W2.2.03	<b>Case Studies (2)</b>
<b>Week 14</b> 21.12.2016 08:00-09:30 W2.2.03	<b>Selected cases and term projects (1)</b>
<b>Week 15</b> 11.01.2017 08:00-09:30 W2.2.03	<b>Selected cases and term projects (2)</b>
<b>Week 16</b> 18.01.2017 08:00-09:30 W2.2.03	<b>Selected cases and term projects (3)</b>
<b>Week 17</b> 25.01.2017 08:00-09:30 W2.2.03	<b>Selected cases and term projects (4)</b>

**Rules for proper academic work**

The lecturer appreciates a substantial exchange between the students, because the fellow students may have valuable contributions to the comprehension of occurring problems or questions.

Following the arguments, collaboration and also an autonomous exercise solving or the discussions on upcoming questions within the lectures are fundamental for a clearer understanding of the subject matter.

Especially large class sizes and foreign languages imply a risk of a high noise level, which has a strong negative influence on the work climate, knowledge acquisition and collaboration. Predominantly a high noise level is caused by a few group members. These 'troublemakers' hinder the other ones from being able to concentrate and therefore won't be tolerated and will be ejected from the class.