

Project: Smart Product Solutions

Module Code: DLBIEPSPS

Module Type see curriculum	Admission Requirements none	Study Level BA	CP 5	Student Workload 150 h
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Semester / Term see curriculum	Duration Minimum 1 semester	Regularly offered in WiSe/SoSe	Language of Instruction and Examination English
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Module Coordinator

N.N. (Project: Smart Product Solutions)

Contributing Courses to Module

- Project: Smart Product Solutions (DLBIEPSPS01)

Module Exam Type

Module Exam

Study Format: Distance Learning
Oral Project Report
Study Format: myStudies
Oral Project Report

Split Exam

Weight of Module

see curriculum

Module Contents

This course focuses on the application of agile engineering methods for smart product solutions within the framework of a practice-oriented project. The architecture and mechanics of smart product solutions will be described by means of their integrated business model components.

Learning Outcomes**Project: Smart Product Solutions**

On successful completion, students will be able to

- answer the question of the relevance of dynamic business models of smart product solutions for business practice.
- describe and analyze smart product solutions by means of the business model architecture and mechanics.
- select and apply the right tools from the engineering methodology toolbox of smart product solutions for the modelling and analysis of digital business models in a practice-oriented way.
- develop management cockpits to support decision-making in the implementation of smart product solutions.

Links to other Modules within the Study Program

This module is similar to other modules in the fields of Computer Science & Software Development

Links to other Study Programs of the University

All Bachelor Programs in the IT & Technology fields

Project: Smart Product Solutions

Course Code: DLBIEPSPS01

Study Level	Language of Instruction and Examination	Contact Hours	CP	Admission Requirements
BA	English		5	none

Course Description

Smart product solutions have the potential to increase the efficiency of existing business models in the context of digital transformation. In addition to the expansion and optimization of traditional business models, smart product solutions also create completely new business models, in which, for example, revenues are not linked to the transfer of ownership of the product, but to its use. In practice, however, the design and analysis of smart product solutions and their business models is difficult for many companies, as the complexity of these smart solutions results in insufficient methodological know-how. Against this background, the students apply various instruments and modelling tools to describe and analyze smart product solutions within the framework of a practice-oriented project.

Course Outcomes

On successful completion, students will be able to

- answer the question of the relevance of dynamic business models of smart product solutions for business practice.
- describe and analyze smart product solutions by means of the business model architecture and mechanics.
- select and apply the right tools from the engineering methodology toolbox of smart product solutions for the modelling and analysis of digital business models in a practice-oriented way.
- develop management cockpits to support decision-making in the implementation of smart product solutions.

Contents

- By means of an agile engineering approach, students learn about the complex interrelationships of smart product solutions in a project-oriented setting. In addition to the structural description, students also gain a comprehensive insight into the quantitative modeling of the dynamic interrelationships of smart product solutions and their business models at a specific product solution level. The consistent application of techniques and tools from the engineering construction kit of smart product solutions enables the development of new business models as well as the adaptation of existing business models through the flexible configuration of interdependent components. Radical innovations with a completely new benefits are just as possible as incremental adjustments in a more evolutionary transformation process. Through the abstract description of the architecture

and the dynamic modelling of the mechanics of the smart product solutions and their business models, students learn the basics for effective decision support in practice, which ensures continuous learning in a digital world with growing dynamic complexity.

Literature

Compulsory Reading

Further Reading

- Avlonitis, V. (2013): PSS readiness manual. A workbook in the PROTEUS series: # 3. 1st edition, Kongens Lyngby: Technical University of Denmark.
- Bejbro Andersen, J. (2013): PSS business models. A workbook in the PROTEUS series: # 7. 1st edition, Kongens Lyngby: Technical University of Denmark.
- Meier, H./Boßlau, M. (2013): Design and Engineering of Dynamic Business Models for Industrial Product-Service Systems. In Y. Shimomura & K. Kimita (Eds.), Lecture Notes in Production Engineering. The Philosopher's Stone for Sustainability: Proceedings of the 4th CIRP International Conference on Industrial Product-Service Systems, Tokyo, Japan, November 8th - 9th, 2012 (pp. 179–184). Springer, Berlin, Heidelberg.
- Sakao, T./Lindahl, M. (2009): Introduction to Product/Service-System Design. Springer, London.
- Zawadzki, P./Żywicki, K. (2016): Smart Product Design and Production Control for Effective Mass Customization in the Industry 4.0 Concept. Management and Production Engineering Review, 7(3), 105–112.

Study Format Distance Learning

Study Format Distance Learning	Course Type Project
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Information about the examination	
Examination Admission Requirements	BOLK: no Course Evaluation: no
Type of Exam	Oral Project Report

Student Workload					
Self Study 120 h	Contact Hours 0 h	Tutorial 30 h	Self Test 0 h	Independent Study 0 h	Hours Total 150 h

Instructional Methods	
<input type="checkbox"/> Learning Sprints® <input type="checkbox"/> Course Book <input type="checkbox"/> Vodcast <input type="checkbox"/> Shortcast <input type="checkbox"/> Audio <input type="checkbox"/> Exam Template	<input type="checkbox"/> Review Book <input type="checkbox"/> Creative Lab <input checked="" type="checkbox"/> Guideline <input type="checkbox"/> Live Tutorium/Course Feed <input checked="" type="checkbox"/> Slides

Study Format myStudies

Study Format myStudies	Course Type Project
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Information about the examination	
Examination Admission Requirements	BOLK: no Course Evaluation: no
Type of Exam	Oral Project Report

Student Workload					
Self Study 120 h	Contact Hours 0 h	Tutorial 30 h	Self Test 0 h	Independent Study 0 h	Hours Total 150 h

Instructional Methods	
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