

# Made To Serve How Manufacturers Can Compete Through Servitization And Product Service Systems

Rahmenkonzept zur Entwicklung von Product-Service Systems Smart Product-Service Systems Effective and efficient design and provision of product-service systems Sustainable Product-Service Systems Introduction to Product/Service-System Design Product-Service Systems Systematische Gestaltung von Product-Service-Systems Product-service System Design for Sustainability Product-Service Integration for Sustainable Solutions Product-service Systems and Sustainability Integrated Engineering of Products and Services Requirements Engineering für IT-gestützte Product Service Systems The Road to Servitization Dienstleistungsmodellierung 2014 Data-driven Product-Service Systems Engineering Product-service System Design for Sustainability Management Information Systems Dienstleistungsmodellierung 2012 Made to Serve Infosystems Christian Botta Pai Zheng Johannes Matschewsky Fabrizio Ceschin Tomohiko Sakao Katja Laurischkat Michael Steinbach Carlo Vezzoli Horst Meier Patrick Müller Marina Berkovich Alessandro Annarelli Oliver Thomas Simon Hagen Carlo Vezzoli Effy Oz Oliver Thomas Timothy Baines Rahmenkonzept zur Entwicklung von Product-Service Systems Smart Product-Service Systems Effective and efficient design and provision of product-service systems Sustainable Product-Service Systems Introduction to Product/Service-System Design Product-Service Systems Systematische Gestaltung von Product-Service-Systems Product-service System Design for Sustainability Product-Service Integration for Sustainable Solutions Product-service Systems and Sustainability Integrated Engineering of Products and Services Requirements Engineering für IT-gestützte Product Service Systems The Road to Servitization Dienstleistungsmodellierung 2014 Data-driven Product-Service Systems Engineering Product-service System Design for Sustainability Management Information Systems Dienstleistungsmodellierung 2012 Made to Serve Infosystems Christian Botta Pai Zheng Johannes Matschewsky Fabrizio Ceschin Tomohiko Sakao Katja Laurischkat Michael Steinbach Carlo Vezzoli Horst Meier Patrick Müller Marina Berkovich Alessandro Annarelli Oliver Thomas Simon Hagen Carlo Vezzoli Effy Oz Oliver Thomas Timothy Baines

smart product service systems draws on innovative practice and academic research to demonstrate the unique benefits of smart pss and help facilitate its effective implementation this comprehensive guide explains how smart pss reshapes product service design in several unique aspects including a closed loop product design and redesign manner value co creation with integrated human machine intelligence and solution design context awareness readers in industry as well as academia will find this to be an invaluable guide to the current body of technical knowledge on smart product service systems smart pss future research trajectories and experiences of implementation rapid development of information and communication technologies artificial intelligence and digital technologies have driven today s industries towards the so called digital servitization era as a result a promising it driven

business paradigm known as smart product service systems smart pss has emerged where a large amount of low cost high performance smart connected products are leveraged together with their generated on demand services as a single solution bundle to meet individual customer needs explains what factors a company needs to consider in their transition towards digital servitization and its advantages describes how this field relates to the sustainability movement and how smart pss can be implemented in a sustainable way includes detailed case studies from different industries including delta electronics inc singapore smart commercialization comac aviation industry smart manufacturing servitization and van high tech smart building services

the world manufacturing companies operate in is changing in the past these companies relied on the design and sale of products today this linear model of business is becoming increasingly insufficient as customers are more and more focused on their core business buying and operating machinery and other goods becomes unattractive to them in response to this manufacturing companies are expanding their value capture into additional stages of the product lifecycle by providing integrated offerings of products and services product service systems psss designing and providing psss is fundamentally different from traditional product sales expanding to become a pss provider is therefore challenging for companies with a history of designing and selling products departing from this it is the aim of this thesis to support manufacturing companies in their expansion to effective and efficient design and provision of psss the research reported has both descriptive and prescriptive properties reflecting the goals of understanding the status quo in manufacturing companies practice and providing support based on this to establish a point of departure the current design and provision of two manufacturing companies expanding their business towards psss was investigated from this an in depth understanding of the status quo and a number of challenges emerged based on this the research had the goal to contribute to identifying and developing solutions to these challenges with an initial focus on methods supporting pss design and provision however although methods fitting to the challenges identified exist they appear to receive limited uptake in manufacturing companies practice in order to improve their practical utility a structured method is proposed to assist users in both academia and practice in developing methods in a requirements oriented fashion the utility of methods in improving the efficiency and effectiveness of pss design and provision is thereby to be enhanced a particular challenge for manufacturing companies expanding to become pss providers is the change in how value is captured resulting from the extensive involvement throughout the lifecycle a need for a broader multidimensional understanding of value capture was identified however the manufacturing companies investigated have been found to experience challenges in grasping this change with a focus on a product sales centric understanding of value capture remaining prevalent to support companies towards reaping the benefits of the expansion to pss design and provision methods to explore how value is currently created and captured in the use phase and how to enhance the future value capture based on that information in the design phase have been developed and applied as a result broadly relevant value dimensions were attained aiming to facilitate a lifecycle focused effective and efficient design and provision of psss eventually to broaden the understanding of effective and efficient design and provision of psss in practice today the potential contributions of real world psss to a circular economy were investigated based on an existing framework the result was ambiguous indicating both advancements compared to

traditional sales and substantial room for improvement particularly with a focus on the absolute decoupling of economic activity and resource use based on the synthesis of the research results manufacturing companies are supported in their expansion to effective and efficient design and provision of pss and towards a promising future

this book investigates the potential contribution that a strategic design approach can make to stimulating and supporting the societal embedding of sustainable pss product service systems a new strategic design role thus emerges a role in which the ideation and development of sustainable pss concepts is coupled with the designing of appropriate transition paths sequence of socio technical experiments to gradually incubate introduce and diffuse these concepts the book also outlines the new design approach and capabilities needed by strategic designers project managers and consultants to operate at such a strategic level on a more operational point of view the work presents a practical how to do design process and associated guidelines to support practitioners in designing and managing the societal embedding process of sustainable pss innovations

introduction to product service system design contains a collection of practical examples demonstrating how to design a pss in industry these recent examples are the results of applying various theories developed in different countries and therefore accommodating diverse cultural differences providing a useful overall guide to the state of the art in theory and practice each chapter covers the cutting edge of a different methodology or practice the book s focus on design is also evident in the discussion of how to anticipate and utilize the various dynamics within each dimension introduction to product service system design will help improve working processes and inspire creative thinking for the wide range of people involved in designing a pss designers marketing professionals sales staff production engineers and service engineers it can also serve as a reference book for university students on advanced courses

this book based on a huge european and asian research project is a state of the art examination of the theory and practice of system innovation through product service system pss design for sustainability from a trans cultural viewpoint pss design incorporates innovative strategies that shift businesses away from simply designing and selling physical products to developing integrated systems of products and services that satisfy human needs the book provides background advice and tools for designers interested in sustainable pss and has a wealth of case studies for practitioners to digest

an industrial product service system is characterized by the integrated and mutually determined planning development provision and use of product and service shares including its immanent software components in business to business applications and represents a knowledge intensive socio technical system meier roy seliger 2010 since the first conference in 2009 the cirp international conference on industrial product service systems has become a well established international forum for the review and discussion of advances research results and industrial improvements researchers from all over the world have met at previous ips2 conferences in cranfield 2009 linköping 2010 braunschweig 2011 and tokyo 2012 in 2013 the 5th cirp international conference on industrial product service systems is held in bochum important topics of ips2 research presented at the conference are planning and development

sustainability business models operation service engineering knowledge management ict modeling and simulation marketing and economic aspects as well as the role of the human in ips2

the concept of product service systems pss promotes a focus shift from selling just products to selling the utilities through a mix of products and services this business approach has recently received increasing attention as a new way to both achieve economic gains while at the same time reducing environmental impacts this booklet uses real company examples to explain pss its potential benefits and limitations in the context of environmental sustainability it draws on the knowledge and experience of pss experts and is a useful reference tool for industry governments academia and civil society

this doctoral thesis is intended to promote the introduction of integrated engineering of products and services the main contribution is a new development methodology for product service systems pss and especially for industrial product service systems ips2 pss are systems integrating products and services as equivalent solution elements in order to maintain innovative business models providing added value for customers the pss development methodology includes a specific system model a generic pss development process model and pss design methods to support early development phases i e the pss planning and requirements engineering

the book describes state of the art product service systems and provides a framework to categorize the knowledge surrounding these systems it discusses the evolution and spread of the servitization model across industries and explores its current and most relevant applications in industry further the book highlights the model s strategic value for business and management operations and sustainability and shows readers how to enhance service design and implementation the contributors provide the theory behind servitization as well as the evidence for it and report practical and industrial lessons learned illustrations charts and tables effectively guide readers through real world and potential applications of product service systems and case studies describing how companies have innovated and developed award winning business models are also included moreover the book exhibits the selection and implementation policies for product service systems in different industrial environments providing comprehensive information on the product service system phenomenon this book is essential reading for researchers and practitioners in the product service and business industries it is also of interest to students and lecturers in business strategy and service management as it shows the latest trends shaping the modern contexts in which companies operate

oliver thomas und markus nüttgens stellen mit ihren beitragenden autoren aktuelle und innovative methoden und werkzeuge zur modellierung von dienstleistungen vor die zur verbesserung von industriellen produkten und hybriden leistungsbündeln beitragen können die servicemodelle können zur implementierung unterstützender anwendungssysteme verwendet werden zahlreiche beispiele verdeutlichen die leistungsfähigkeit und praktische umsetzbarkeit der dienstleistungsmodellierung

a state of the art examination of the theory and practice of system innovation through

product service system pss design for sustainability from a trans cultural viewpoint based on a european and asian research project it provides case studies background advice and tools for designers interested in sustainable pss

the coverage in this edition of management information systems reflects the latest advances in mis tools and trends a wide selection of hands on practice exercises at the end of every chapter stimulates business problem solving skills and a supporting website provides interactive learning opportunities

dienstleistungen werden zunehmend zum zentralen katalysator innovativer geschäftsmodelle die charakteristika von dienstleistungen wie die potenzial prozess und ergebnisdimension müssen dabei ex ante spezifiziert beschrieben und bewertet werden konzepte zur dienstleistungsmodellierung gewinnen damit prominent an bedeutung diese entwicklung ist branchenübergreifend in bewegung sei es an der schnittstelle zur industriellen produktion in form so genannter product service systems im öffentlichen sektor in form so genannter produkt und prozessmodelle oder in dienstleistungszentrierten geschäftsplänen im umfeld digitaler geschäftsmodelle und unternehmensgründungen dienstleistungsmodelle werden als folge zum dreh und angelpunkt für betriebswirtschaftliche investitionsentscheidungen ingenieurwissenschaftliche produktinnovationen und informationstechnische umsetzungen neue technologien wie z b soziale netzwerke oder semantic ermöglichen einerseits eine steigerung der produktivität von dienstleistungen sie erfordern andererseits jedoch auch leistungsfähige methoden und werkzeuge zur handhabung und nutzung in der unternehmenspraxis allein das potenzial in den after sales bereichen des maschinenbaus erscheint geradezu unerschöpflich und ermöglicht neue wertschöpfungskonzepte und partnerschaften an der markt und kundenschnittstelle diesen herausforderungen und potenzialen tragen wir durch den vorliegenden herausgeberband dienstleistungsmodellierung 2012 product service systems und produktivität rechnung

a comprehensive practical introduction to one of the most important new trends in manufacturing globally the delivery of a service component as an added value when providing products servitization is all the rage in the manufacturing sector around the world yet despite the clear competitive advantage of servitization most manufacturers remain reluctant to venture into what for them is a strange new world written by a team of internationally respected servitization experts and innovators this book provides you with a detailed road map for successfully navigating the servitization terrain unlike most authors on the subject who merely sing the praises of servitization baines and lightfoot provide you with a framework for accessing the feasibility of adopting a services led competitive strategy in your company along with strategies for designing and implementing the kinds of service offerings customers increasingly are coming to expect grounded in real world practice and supported by a wealth of up to the minute research this book helps ease the way for manufacturers considering adopting a servitization model shows how to exploit your company s manufacturing competencies to build a strong servitization element without becoming just another services company provides numerous illustrations and examples of services led competitive strategies with an emphasis on the advanced services most widely associated with servitization worldwide packed with fascinating and instructive case studies from leading manufacturing firms across industry sectors including caterpillar rolls royce

alstom man xerox and others

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