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Nils Urbach • Maximilian Röglinger
Editors

Digitalization Cases

How Organizations Rethink Their Business for the Digital Age

Springer

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ISSN 2192-8096 ISSN 2192-810X (electronic)
Management for Professionals
ISBN 978-3-319-95272-7 ISBN 978-3-319-95273-4 (eBook)
https://doi.org/10.1007/978-3-319-95273-4

Library of Congress Control Number: 2018956313

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This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Testimonials

Teaching on digitalization needs real-life cases. In this book you can find them—21 interesting cases on different industries and important emerging technologies!

Thomas Hess
Professor of Information Systems and New Media, LMU Munich

Digitalization is reshaping business on a global scale, and it is evident that organizations must transform to thrive in the digital economy. *Digitalization Cases* provides firsthand insights into the efforts of renowned companies. The presented actions, results, and lessons learned are a great inspiration for managers, students, and academics.

Anna Kopp
Head of IT Germany, Microsoft

Understanding digitalization in all its facets requires knowledge about its opportunities and challenges in different contexts. Providing 21 cases from different companies all around the world, *Digitalization Cases* makes an important contribution toward the comprehensibility of digitalization—from a practical and a scientific point of view.

Dorothy Leidner
Ferguson Professor of Information Systems, Baylor University

For the corporate world, digitalization is a challenge and an opportunity at the same time. Companies that want to succeed in the digital age need to realize the benefits of emerging technologies, develop new business models, and transform themselves internally as well as in their interaction with customers, partners, and suppliers. This publication stands out by providing well-structured cases that are academically sound and highly business relevant with tangible results. Recommended reading for everyone who is responsible for digitalization in companies.

Helmuth Ludwig
Global Head of Information Technology, Siemens

This is a must-read volume for anyone with an interest in how opportunities shaped by digital technologies are being embraced by organizations from different industries. By structuring each case study into situation faced, actions taken, results achieved, and lessons learned, the compendium provides an accessible and valuable resource for executives looking to take their organizations on a digital transformation journey.

Joe Peppard
Principal Research Scientist, Center for Information Systems Research, MIT Sloan School of Management

This book is a great source of inspiration and insight on how to drive digitalization. It shows easy to understand good practice examples which illustrate opportunities and at the same time helps to learn what needs to be done to realize them. I consider this book a must-read for every practitioner who cares about digitalization.

Martin Petry
Chief Information Officer and Head of Business Excellence, Hilti

In the fast-paced digital economy, we need to reflect, consolidate, and collectively learn for meaningful progression. This outstanding book provides 21 carefully selected cross-sector cases to offer not only these much-needed learning experiences, but also the evidence that makes these insights credible.

Michael Rosemann
Professor for Information Systems, Queensland University of Technology

This book shows in an outstanding clarity the already ongoing changes due to digitalization. It becomes clear that disruption is manageable through actively driven digitalization. In practice, however, disruption will primarily affect those who show themselves to be passive. The cases presented in this book underline that courage to change is the requirement of practice.

Markus Richter
Chief Information Officer, German Federal Office for Migration and Refugees

Practically all organizations today recognize the need to respond to digital opportunities and threats. Yet, they struggle to know how to react. Part of the problem is that there are so few good examples for them to learn from. *Digitalization Cases* provides a wealth of detailed and rigorous case studies presented in a consistent format across different countries and industries. The book is a great resource for anyone who wishes to understand the deep mechanics of digital transformation.

Michael Wade
Professor of Innovation and Strategy, IMD Lausanne

Today, digitalization entails significant challenges for companies across all industries. To succeed in a fast-changing environment, they must transform existing work routines, processes, and structures. Including a number of detailed case studies, *Digitalization Cases* provides insights in real-world projects that handle digitalization in different ways. Considering various countries and industries, the book serves as an excellent compilation for understanding the complexity and diversity of digitalization.

Thomas Wölker
Chief Information Officer, REHAU

Foreword

For 50 years, the mantra for information technology was to enable business strategy: understand a company's people, products, services, customer relationships, and processes and then implement technology to make them more efficient, scalable, and reliable. IT continues to play that role, but that is not why technology is disrupting businesses. The new role of information (digital) technologies is to *inspire* business strategy.

Digital technologies (social, mobile, analytics, cloud, Internet of things, blockchain, artificial intelligence, and many more) provide three important capabilities: (1) unlimited connectivity, (2) ubiquitous data, and (3) massive automation. Being inspired by technologies means recognizing the customer value propositions that these capabilities make possible. Those value propositions depend on enriching traditional products and services with data and software.

Digital technologies are readily accessible. In other words, employees, competitors, customers, and partners can all access the technologies and make demands as to how a company deploys them. As a result, digital technologies cannot be a source of competitive advantage. Anything great a company does with digital technologies and related data will be replicated. Thus, digital mostly raises the bar in terms of baseline expectations for information-rich products and services and for seamless customer experiences.

But while identifying creative applications of digital technologies and data cannot create competitive advantage, executing a value proposition better than anyone else can be a huge source of competitive advantage. Of course, strategy execution with digital technologies is harder than an enthusiastic iPhone user might imagine. To deliver offerings consistent with new value propositions, companies need to introduce new processes, platforms, skills, and roles. The necessary changes are massive.

Suddenly, every company must excel at both operational excellence (core business operations) and rapid innovation (developing new value propositions for customers). And those two requirements are nearly opposite in nature! Operational excellence depends on disciplined enterprise processes usually supported by large enterprise systems. Rapid innovation depends on agile teams usually supported by reusable business and technology components. The former is about process optimization; the latter is about test and learn processes.

Established companies are in the midst of transforming to become digital, but the transformation journey is proving to be long and winding. I have been studying digital transformations for 4 years, and, as far as I know, no company has yet completed that journey. Nonetheless, researchers are discovering how companies progress on their journeys.

The case studies in this book start to capture best principles and practices for digital transformations. They provide some in-depth insights into what is and isn't working. It's a good start. The journey may be long, but it's exciting. The best companies will fulfill extraordinary visions that improve their customers' lives. As you review these cases, we hope you find some hints as to how you might help a company become more digital.

Cambridge, MA Jeanne W. Ross

Preface

In the digital age, emerging technologies significantly influence processes, products, services, and business models, e.g., by connecting individuals, organizations, machines, and other "things," by enabling novel working, collaboration, and automation models, as well as by providing access to untapped data sources. The resulting digital economy is highly volatile, uncertain, complex, and ambiguous. This raises a wide range of challenges for organizations. Hyperconnected customers with individual needs, opaque regulatory requirements, as well as continuously increasing competitive pressure from start-ups and digital giants are just a few examples. However, today's business environment also offers untapped potential. Among many others, these include the further development and disruption of existing business models, the identification of previously unknown customer needs, the exploration of new markets, and the collaboration with other market players. To thrive in such an environment, organizations must unfold the potential of digital technologies in their business strategies and business models, reimagine their work routines, processes, and structures, as well as manage and govern IT infrastructures that are central to their value propositions.

Our idea behind editing this book is to present a rich compilation of real-world cases on digitalization. With all economic and societal sectors being challenged by digital technologies, we aim at illustrating how organizations leverage their capabilities to create disruptive innovation, to develop digital business models, and to transform themselves. For this book, we have gathered 21 cases on how companies and public organizations rethink their business for the digital age. The case descriptions report on best practices and lessons learned from different organizations that succeeded in tackling the challenges and seizing the opportunities of the digital world. The cases provide insightful examples for practitioners as well as interesting cases for researchers, teachers, and students. All cases follow a unified schema, making them easily accessible to readers.

The cases of this book are grouped into three major blocks, representing the major action fields of digitalization. Part I contains cases of *digital disruption,* a field that refers to the monitoring and analysis of emerging technologies. It also includes the development of competencies for leveraging these technologies. The cases of this part stem from Deutsche Telekom, Lufthansa Systems, Baur Group, and Porsche. Part II represents cases related to *digital business,* a field covering the realization of

new business models that are enabled by digital technologies and disrupt the traditional business. It often results from the smart fusion of the physical and digital world. The cases report about Kaeser Compressors Danske Bank, GKN, and the Presbyterian Church of Ghana, among others. Finally, Part III covers cases on *digital transformation* which refers to technology-induced organizational change. It embraces the organizational, processual, and technological efforts necessary for organizations to succeed in the digital age. This part includes cases from ABB, Engel, the US Federal Communications Commission, Volkswagen, Deutsche Bahn, the Super Hospital Aarhus, and AXA.

We want to thank several people for supporting the compilation of this book. Most importantly, we thank Marie-Sophie Denner for continuously supporting us in managing the overall book project. We are also very grateful to Christian Rauscher from Springer who supported the project from the publisher's side. Finally, we thank all colleagues who served on the editorial board of this book and who dedicated much time and effort in providing reviews to further develop the cases presented in this book.

We hope you will enjoy reading the book and working with the cases, and we invite you to contact us for questions, feedback, and discussions.

Bayreuth, Germany Nils Urbach
Bayreuth, Germany Maximilian Röglinger
April 2018

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We are grateful for the support of colleagues and friends who supported this book project by serving on its editorial board.

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