



Yuri Popov

Digitalisation in the German Mittelstand

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Mit einem Vorwort von Prof. Dr. Heinz Siebenbrock

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List of Abbreviations

BMWi.....	Federal Ministry for Economic Affairs and Energy
CSOFT	Customer relationship, Service, Organization, Finance, Technology
DBT	Digital Business Transformation
DIHK	Deutscher Industrie- und Handelskammertag e.V.
DT	Digital Transformation
EKAM	European Competence Centre for Applied Mittelstand Research
EU	European Union
EY	Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft
GDPR	General Data Protection Regulation
ICT	Information and Communications Technology
IfM	Mittelstand Research Institute
IoT	Internet of Things
IT	Information Technology
IW.....	Institute of the German Economy
KfW.....	Credit Institute for Reconstruction
M	Mean
PESTLE	Political, Ecological, Sociocultural, Technological, Economic, Legal
R&D	Research and Development
SD	Standard Deviation
SE	Standard Error
SMACIT	Social, Mobile, Analytics, Cloud, and the Internet of Things
SMART	Specific, Measurable, Achievable, Realistic, Time-bound
SME	Small and medium-sized enterprise
STOF ..	Service Domain, Technology Domain, Organization Domain, Finance Domain
SWOT.....	Strengths, Weaknesses, Opportunities, and Threats
VISOR	Value, Interface, Service Platforms, Organizing Model, Revenue/Cost
VUCA	Volatility, Uncertainty, Complexity, and Ambiguity
VUCA prime	Vision, Understanding, Clarity, and Agility
ZEW	Centre for European Economic Research

Foreword

It is no longer a question of whether the German Mittelstand should become more digital. Rather, it is about how the Mittelstand can become more digital. The digitalisation of existing processes has already led to the considerable simplification of work and cost savings. Commercial correspondence, from invoices to tax returns, has not been conducted with a typewriter for some time. Everything has become faster and easier, but have we also become more satisfied as employees and customers? Do the products and services of classic Mittelstand companies satisfy people's needs better than ever before?

One gets the impression that digitalisation often degrades, even suppresses, the individual. And yet, people sometimes submit to digitalised processes even more consistently than they once did to the assembly line. This suppression is no longer limited to the internal organisation; the customer is immediately included: endless waiting loops, ticket-controlled processes and conversations that follow a script. Service, in particular, is being downgraded rather than upgraded in large – and increasingly also in medium and small – companies. Mittelstand companies should be expressly cautioned against this form of digitalisation!

Instead, let's use digitalisation to improve communication, especially in the Mittelstand! Home offices, video conferencing, and special platforms for sharing information have suddenly boomed in times of the pandemic. Concepts for increasing adaptability, such as agility, have been on everyone's lips. What was interesting was not that these techniques and concepts were introduced, but how they were implemented. Some companies discovered new capabilities for monitoring in video conferencing and platforms: video conferencing and access statistics from these platforms compensated for the loss of control that home offices had caused. Other companies, however, have successfully conceptualised the home office as a source of self-organisation, creativity and genuine proximity to employees and customers.

The mindset with which digitalisation is introduced and implemented is thus also important in the Mittelstand. I am pleased that Yuri Popov has also championed this idea in his work on the digitalisation in the German Mittelstand.

Prof. Dr. Heinz Siebenbrock

May 2021

Preface

The German Mittelstand is the engine of the German economy and refers to the entirety of owner-managed and family-run businesses. While the business environment is constantly changing, enterprises must adapt to new market conditions to ensure competitiveness and future viability. Although the Mittelstand has a fundamental social, political, and economic importance, numerous Mittelstand companies are facing great challenges in the digital age. Rapid technological development and changing customer requirements are forcing companies to adjust or even change their products, processes, value chains, business models, structure, and culture. Thus, this book focuses on the development of digitalisation in the German Mittelstand and the management of digital transformation.

I would like to express my sincere gratitude to Prof. Dr. Heinz Siebenbrock for his constant support and invaluable advice. His immense knowledge and plentiful experience encouraged me throughout the writing process.

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Special thanks to my senior lecturer Edward Sodmann for his persistent encouragement during my studies.

I would like to express my profound and sincere gratitude to my family. I am deeply indebted to my parents for their continuous and unparalleled love, support and encouragement. Without them, this undertaking would not have been possible.

Last but not least, I would like to sincerely thank and recognise my partner, Marina Lipski, for her encouragement and support. Marina has constantly supported, motivated, encouraged and inspired me throughout the writing process. As such, this book is dedicated to Marina.

Yuri Popov

May 2021

Abstract

Digitalisation is leading to far-reaching changes and challenges in the German Mittelstand. German Mittelstand companies are owner-managed or family-run businesses that significantly contribute to the well-being of the German economy. Although Mittelstand companies are currently highly challenged by digitalisation, they must adapt to these new conditions to remain competitive. However, academic literature is still limited in the domain of digitalisation in the Mittelstand, and there is insufficient information on how Mittelstand enterprises can successfully manage digital business transformation.

This work attempts to answer the question of how the German Mittelstand has adapted to the changes and managed the challenges caused by digitalisation in recent years. Moreover, this book explains in detail the nature of the German Mittelstand, as well as the specifics and differences from other company types, while identifying systematic design options for digital transformation. For this reason, the focus also falls on business model innovation and leadership in the digital age, as these are crucial for digital business transformation.

The work analyses large-scale survey data by using the descriptive statistical methods. Based on the quantitative analysis, the study explores the academic theories and practical models that can help manage digital transformation in Mittelstand enterprises. The German Mittelstand increasingly recognises the importance of digital technology for business models and assesses digitalisation as an opportunity.

However, the research finds that there are fundamental differences between small, medium, and large firms, and the degree of digitalisation differs widely across German sectors. Particularly, research and development intensive and knowledge-based sectors understand the importance of digitalisation. The analysis finds that Mittelstand companies predominantly focus on digitalising the customer relationship, while digital products and services are still given too little consideration. Additionally, the Mittelstand is not hindered in investing in digitalisation, but it nonetheless faces considerable challenges during digital business transformation, such as a lack of information technology skills and specialists, the fulfilment of data security and data protection requirements, and the adoption of the company and work organisation.

This work determines that the role of the Mittelstand manager is fundamental for digital business transformation due to the manager's crucial impact on the company through the unity of ownership and

management. Simultaneously, employees must accept the changes caused by digitalisation and understand their new roles and responsibilities. In this context, digital leadership is a useful approach for managing digital transformation, as it is a cross-sectional competence that combines different necessary theories, methods, and instruments.

The managers and employees of Mittelstand companies wherein digitalisation is subordinate require further training to understand its risks and opportunities, as well as to gain digital skills for managing digital transformation. Mittelstand managers must assess the availability of resources to define relevant trends and conduct digitalisation projects. Furthermore, the digital transformation must be customer- and employee-orientated to meet customer needs and ensure employee satisfaction. Finally, the creation of a digital vision, strategy, and culture is essential to successfully adapting to the changes of digitalisation and managing the challenges of digital transformation.