

FGF Studies in Small Business and Entrepreneurship

Editor-in-Chief

Joern H. Block

Trier University, Trier, Germany

Andreas Kuckertz

University of Hohenheim, Stuttgart, Germany

Editorial Board

Dietmar Grichnik

University of St. Gallen, St. Gallen, Switzerland

Friederike Welter

University of Siegen, Siegen, Germany

Peter Witt

University of Wuppertal, Wuppertal, Germany

More information about this series at <http://www.springer.com/series/13382>

Ronny Baierl • Judith Behrens • Alexander Brem
Editors

Digital Entrepreneurship

Interfaces Between Digital Technologies
and Entrepreneurship

 Springer

Editors

Ronny Baiertl
Center for Interdisciplinary Education
Dresden University of Applied Sciences
Dresden, Germany

Judith Behrens
Solvay Business School
Université Libre de Bruxelles
Brussels, Belgium

Alexander Brem
Chair of Technology Management
University of Erlangen-Nuremberg
Nuremberg, Germany

ISSN 2364-6918

ISSN 2364-6926 (electronic)

FGF Studies in Small Business and Entrepreneurship

ISBN 978-3-030-20137-1

ISBN 978-3-030-20138-8 (eBook)

<https://doi.org/10.1007/978-3-030-20138-8>

© Springer Nature Switzerland AG 2019

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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

Preface

Digitalization has been roiling markets and disrupting companies for more than two decades. It drives worldwide networking, innovation phases are being augmented through data operations, and the boundaries between industries are becoming distorted (Bughin and van Zeebroeck 2017). Digitalization is rapidly changing our living and working life. Robots are working together with people, autonomous systems are navigating us safely through traffic, and even the elderly can live a self-determined life with intelligent assistants. From an economic point of view, customized goods and services can now be offered at mass production prices. Despite all the hype, digitalization is not a new trend. The Third Industrial Revolution started as early as the beginning of the 1970s and has been continuing to this day. It is shaped by the use of electronics and information technologies in the economy as well as progressive standardization and automation of business processes. Digitalization is transforming the locus of entrepreneurial opportunities and entrepreneurial practices.

Even though different books and journal publications have already been researching digitalization activities (e.g., Nambisan 2017; Giones and Brem 2017), this book contributes to the current discussion by giving additional insights into the highly relevant area of digital entrepreneurship. Digital entrepreneurship is broadly defined as creating new ventures and transforming existing businesses by developing novel digital technologies or novel usage of such technologies. Digital entrepreneurship has been viewed as a critical pillar for economic growth, job creation, and innovation by many countries. Additionally, digital technologies have become a new economic and social force for reshaping traditional business models, strategies, structures, and processes. Digital technologies have enabled the growth of the sharing economy by linking owners and users and disrupting the previous dualism of businesses and customers. It is evident that digital technologies have a significant impact on the growth of entrepreneurs and their developmental processes. However, only a limited number of studies in entrepreneurship and technology research started to examine the impact of digital technologies on entrepreneurial decision making

(e.g., Fischer and Reuber 2014) and on entrepreneurial activities for venture development (e.g., Allison et al. 2014).

Prompted by the significant growth of digital entrepreneurship and the lack of research in that field, this book studies the impact of digital technologies on entrepreneurial processes and outcomes in several contexts. The following chapters focus on the management of new technology-based firms as well as technology projects initiated in an academic or industrial context. The book is designed to assemble a rich, vibrant, and multifaceted collection of studies to enrich the discussion on and enhance the understanding of the reality and management of technology-based firms and projects. Thus, this book aims to be a standard reference in the field of digital entrepreneurship and to create a scientific basis for entrepreneurs, investors, universities, research organizations, and established corporations. As a result of our highly competitive review process, this book includes five chapters representing several perspectives of digital entrepreneurship. The following paragraphs summarize each chapter's main contributions based on the respective abstracts and introductions. The chapters are arranged alphabetically according to the first author's names.

The chapter entitled "Digital Entrepreneurship and Value Beyond: Why to Not Purely Play Online" written by Alina Arlott, Tassilo Henike, and Katharina Hölzle raises the question of why successful players that operate purely online turn to offline channels and what they can possibly gain from it. Furthermore, the topic of what digital entrepreneurs can learn from these experiences will also be addressed. The authors used four case studies including interviews and observations within the German health, consumer electronics, home furniture, and food industry to address these questions. They show that the addition of a physical offline presence adds value to these new ventures in a functional, emotional/social, economic, and status dimension. The interviewees confirmed that, sooner or later, many ventures must go offline. Only services that have a dominant online position have the chance to survive as pure online players.

The chapter entitled "The Role of Innovation and IP in AI-Based Business Models" written by Martin A. Bader and Christian Stummeyer gives insights into proprietary and open innovation approaches that are applied in artificial intelligence (AI)-based business models. Starting with the historical emergence of AI, the authors present the state of the art of innovation structures in AI applications and AI-based business models. Finally, they elaborate on the role of intellectual property (IP) with a special focus on patents by analyzing patenting data and the top AI patentees: corporations, research organizations, and top patenting AI start-ups. The authors conclude with their own model of formal and informal protection strategies applied in AI-based business models and how to balance open and proprietary innovation with a focus on entrepreneurship and start-ups.

The chapter entitled "Digital Absorptive Capacity in Blockchain Start-ups" written by Rosaura A. Chacón and André C. Presse targets different audiences such as entrepreneurs, researchers, CEOs, strategic managers, and business owners with necessary information about absorptive capacity (AC) and its relation to firm performance in the context of an increasingly digitalized economy. This topic is of

special relevance since the acquisition of knowledge and its conversion into dynamic capabilities provide enterprises with the possibility to go through digital transition and transform the acquired knowledge into modified business models, innovative products, and upgraded services. Since the first crafting of AC theory, there has been ample research on its application in medium and large companies. The contribution of this study is that it assesses the concept of AC and its impact on firm performance in start-ups. The methodological approach involves quantitative data analysis using a survey applied to a sample of 44 blockchain start-ups. The authors analyze firm performance by applying different measures that were previously tested in other studies: sales growth, profit growth, growth in market share, and growth in return on capital. They find a positive relationship between AC and firm performance in blockchain start-ups.

The chapter entitled “Entrepreneurship in a New Digital Industry: The Emergence and Growth of Mobile Health” written by Lien Denoo and Helena Yli-Renko takes a deep dive into the mobile health industry and examines its origins, evolution, and structure. The authors discuss the unique features of mobile health as an example of a newly emerged digital industry and present a set of interdisciplinary research opportunities for scholars who are interested in digital entrepreneurship. Thus, this chapter contributes to our understanding of industry emergence, in particular the co-evolution of new ventures and a novel digital industry. Thus, the authors offer important insights for researchers, entrepreneurs, and policy makers.

The chapter entitled “Entrepreneurship as an Innovation Driver in an Industrial Ecosystem” written by Markus Hofmann and Ferran Giones considers the case of the leading players in the wind industry in Denmark in order to provide interesting insights on how entrepreneurs contribute to the introduction of new technology innovations in industrial ecosystems. The authors combine archival data and interviews with experts and actors in the industrial ecosystem to see if the characteristics of digital technologies facilitate the participation of new entrants. They also provide a review of the recent discussion on innovation and entrepreneurial ecosystems and a historical account of the wind industry ecosystems. Finally, the authors outline implications and takeaways for readers from the research and industrial area.

The chapter entitled “Virtual Reality as a Digital Learning Tool in Entrepreneurship: How Virtual Environments Help Entrepreneurs Give More Charismatic Investor Pitches” written by Oliver Niebuhr and Silke Tegtmeier deals with the entrepreneurial key element of the investor pitch. It examines if and to what extent the acoustic parameters of a charismatic tone of voice can be improved by rehearsing a pitch in a virtual presentation setting in comparison to a traditional setting in which speakers rehearse their pitch alone in a quiet room. For this purpose, speech-production and perception experiments are combined. About 5000 measurements were taken from the elicited investor pitches and the acoustic results were cross-validated by 31 listeners who judged excerpts of all pitches in terms of perceived speaker charisma. On this basis, the authors provide empirical evidence that the traditional rehearsal setting degrades the charismatic tone of voice of a speaker with each new repetition of the investor pitch. Rehearsing in a virtual reality environment, on the other hand, counteracts this erosion effect and even results in a gradual

improvement of the speaker's charismatic tone of voice. Initial findings also indicate that this positive virtual reality effect persists when speakers return from the virtual to the traditional rehearsal setting.

The chapter entitled "Effects of Internal Corporate Venturing on the Transformation of Established Companies: Tackling the Digitalization Challenge" written by Christoph J. Selig, Tim Gasser, and Guido H. Baltes aims at answering how different corporate venturing forms contribute to the strategic renewal of established companies. For this purpose, qualitative research methods are used to analyze data from 17 interviews conducted in two German high-tech companies. This chapter provides empirical evidence in the field of corporate venturing by uncovering new insights about the different transformational effects of corporate venturing initiatives on the core organization. It further reveals that corporate venturing forms can be classified into two categories according to their respective level of entrepreneurship and frequency of execution. Both categories exhibit different transformational effects and can be considered complementary to each other.

The chapter entitled "The Internet of Things in a Business Context: Implications with Respect to Value Creation, Value Drivers, and Value Capturing" written by Victor Wolf, Jutta Stumpf-Wollersheim, and Lukas Schott focuses on the Internet of Things (IoT) as a network that connects devices and everyday objects to exchange data. IoT solutions consist of two elements, namely, the "thing" itself and its digital addition. Thus, these solutions deliver value, by including a physical "thing"-based function and a digital, connected IT-based function. Due to this hybrid nature of the IoT construct, firms have to rethink how to create and capture value. However, we still know very little about the influence of the IoT on value creation, value drivers, and value capturing in a business context. The authors conceptually analyze the potential impacts of the IoT on value creation, value drivers, and value capturing. With regard to value creation, they suggest that the characteristics of IoT solutions (the independence of the information stream and its accessibility) result in new possible ways of creating value and in specific drivers of value creation in IoT environments, namely, efficiency, network effects, customization, servitization and value co-creation, shared value drivers, and novelty. With regard to value capturing, the authors suggest that the hybrid value construct enables the value stream of digital information to be independently marketed, thereby allowing for completely new ways of capturing value in the IoT context.

This book is published as part of the FGF Studies in Small Business and Entrepreneurship. The book series serves as a vehicle to help academics, professionals, researchers, and policy makers working in the fields of small business and entrepreneurship to disseminate and obtain high-quality knowledge. We sincerely thank the editors-in-chief of the book series Jörn H. Block and Andreas Kuckertz for providing academic freedom in elaborating this editorial book's topic. Moreover, our sincere thanks go to the FGF as the leading and most important scientific association for entrepreneurship, innovation, and SMEs in the German-speaking world for supporting our intention to publish an editorial book in many ways. In addition, we are grateful for the highly professional services provided by Springer—namely by Ruth Milewski and Prashanth Mahagaonkar. Finally, we thank all authors of

chapters provided within this book for their constructive works and their openness in addressing our reviewers' comments.

Dresden, Germany
Brussels, Belgium
Nuremberg, Germany

Ronny Baierl
Judith Behrens
Alexander Brem

References

- Allison, T. H., Davis, B. C., Short, J. C., & Webb, J. W. (2015). Crowdfunding in a prosocial microlending environment: Examining the role of intrinsic versus extrinsic cues. *Entrepreneurship Theory and Practice*, 39, 53–73. doi:10.1111/etap.12108
- Bughin, J., & van Zeebroeck, N. (2017). 6 Digital strategies, and why some work better than others. *Harvard Business Review*, 56(4), 80–86.
- Fischer, E., & Reuber, R. (2014). Online entrepreneurial communication: Mitigating uncertainty and increasing differentiation via Twitter. *Journal of Business Venturing*, 29(4), 565–583. <https://doi.org/10.1016/j.jbusvent.2014.02.004>
- Giones, F., & Brem, A. (2017). Digital technology entrepreneurship: A definition and research agenda. *Technology Innovation Management Review*, 7(5), 44–51. <http://timreview.ca/article/1076>
- Nambisan, S. (2017). Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship. *Entrepreneurship Theory and Practice*, 41, 1029–1055. <https://doi.org/10.1111/etap.12254>

Contents

Digital Entrepreneurship and Value Beyond: Why to Not Purely Play Online	1
Alina Arlott, Tassilo Henike, and Katharina Hölzle	
The Role of Innovation and IP in AI-Based Business Models	23
Martin A. Bader and Christian Stummeyer	
Digital Absorptive Capacity in Blockchain Start-ups	57
R. A. Chacón and A. C. Presse	
Entrepreneurship in a New Digital Industry: The Emergence and Growth of Mobile Health	79
Lien Denoo and Helena Yli-Renko	
Entrepreneurship as an Innovation Driver in an Industrial Ecosystem	99
Markus Hofmann and Ferran Giones	
Virtual Reality as a Digital Learning Tool in Entrepreneurship: How Virtual Environments Help Entrepreneurs Give More Charismatic Investor Pitches	123
Oliver Niebuhr and Silke Tegtmeier	
Effects of Internal Corporate Venturing on the Transformation of Established Companies	159
Christoph J. Selig, Tim Gasser, and Guido H. Baltes	
The Internet of Things in a Business Context: Implications with Respect to Value Creation, Value Drivers, and Value Capturing	185
Victor Wolf, Jutta Stumpf-Wollersheim, and Lukas Schott	

Contributors

Alina Arlott Audibene, Berlin, Germany

Martin A. Bader THI Business School, Technical University of Ingolstadt, Ingolstadt, Germany

BGW AG Management Advisory Group, St. Gallen, Switzerland

Guido H. Baltes IST Institute for Strategic Innovation and Technology Management, HTWG Konstanz, University of Applied Sciences, Konstanz, Germany

Rosaura Chacón Grenke Centre for Entrepreneurial Studies, SRH Hochschule Berlin, Berlin, Germany

Lien Denoo Department of Management, Tilburg University, Tilburg, The Netherlands

Tim Gasser IST Institute for Strategic Innovation and Technology Management, HTWG Konstanz, University of Applied Sciences, Konstanz, Germany

Ferran Giones Mads Clausen Institute, University of Southern Denmark, Sønderborg, Denmark

Tassilo Henike Innovation Management and Entrepreneurship, University of Potsdam, Potsdam, Germany

Markus Hofmann Mads Clausen Institute, University of Southern Denmark, Sønderborg, Denmark

Katharina Hölzle Innovation Management and Entrepreneurship, University of Potsdam, Potsdam, Germany

Oliver Niebuhr Centre of Industrial Electronics, Mads Clausen Institute, University of Southern Denmark, Sønderborg, Denmark

André Presse Grenke Centre for Entrepreneurial Studies, SRH Hochschule Berlin, Berlin, Germany

Lukas Schott Konica Minolta Business Solutions Deutschland GmbH, Hamburg, Germany

Christoph J. Selig IST Institute for Strategic Innovation and Technology Management, HTWG Konstanz, University of Applied Sciences, Konstanz, Germany

Christian Stummeyer THI Business School, Technical University of Ingolstadt, Ingolstadt, Germany

Stummeyer Consulting, Munich, Germany

Jutta Stumpf-Wollersheim Technische Universität Bergakademie Freiberg, Freiberg, Germany

Silke Tegtmeier Centre of Industrial Electronics, Mads Clausen Institute, University of Southern Denmark, Sønderborg, Denmark

Victor Wolf Technische Universität Bergakademie Freiberg, Freiberg, Germany

Helena Yli-Renko Lloyd Greif Center for Entrepreneurial Studies, Marshall School of Business, University of Southern California, Los Angeles, CA, USA