

# Book Review: Research Handbook on Digital Strategy

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## ABSTRACT

Bringing together contributions from international experts in digital strategy, the research handbook depicts the contours of the major threads of investigation that shape the digital transformation process at firm, platform, market, and industry levels. Chapters explore the fundamentals of digital strategy and digitization, the design of digital organizational architectures, how value is created and captured through data strategies, and the manifold challenges that firms face in the digital era. From the impact of big data analytics and artificial intelligence on management thinking and practice to the nature of digital competition and user engagement on social media platforms, the research handbook takes stock of emerging issues and advancements in digital strategy research and ultimately considers how future digital strategy frameworks might be cultivated.

## KEYWORDS

Corporate Strategy, Digital Business Model, Freemium Strategy, Graph Theory, P2P, Physical Reality, Platform Sponsor, User Engagement Strategy, Value Conceptualization

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This state-of-the-art research handbook presents a comprehensive overview of the key strategic challenges that firms face when dealing with digital markets, platforms, and products and services, from old strategy questions in need of different solutions to entirely novel issues posed by the new competitive digital context (Nadkarni & Prügl, 2021).

This book is split into four distinct parts. Part 1, “Digital Strategy as Digital Business Model Choice”, includes Chapter 1 through Chapter 6. The first chapter integrates the traditional literature on corporate strategy with more recent literature on digital in business and strategy research, to examine new mechanisms and drivers offered by digital diversification. This chapter thus offers various contributions: First, the authors advance a definition and conceptualization of digital diversification and compare it to traditional (non-digital) diversification. In doing this, the authors explore how digital diversification changes the traditional cost-benefit drivers in traditional diversification, and

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how the relationship between relatedness and performance shifts from a classic inverted U-shape curve in traditional diversification to an S-shaped curve in digital diversification (Schommer, Richter, & Karna, 2019), which increasingly favors less related diversification. Second, the authors characterize digital diversification across two key dimensions: locus (i.e., supply-side vs demand-side); and type (i.e., product vs business model), which the authors investigate by pointing to opportunities for firm growth. Finally, the authors present a series of promising yet underdeveloped areas for future investigation, and the authors advance an agenda to foster our understanding of digital diversification for both research and practice.

Firms are increasingly shaken by the challenges triggered by today's unpredictable landscapes. In this context, they are constantly searching for new ways to address fast-moving marketplaces more rapidly and with greater flexibility. Chapter 2 investigates how strategic agility helps organizations innovate their digital business models to adapt to changing market conditions. To this end, the authors perform an exploratory single-case study focusing on Clickio, a leading firm in programmatic marketing that offers innovative technological solutions for digital publishers. This study provides a structured analysis of how strategic agility assists firms in accomplishing digital business model innovation across three intertwining dimensions – the business model's content, structure, and governance. Our study may support managers seeking to redefine their digital business model by learning more about how strategic agility can be embedded into their strategic and operational efforts to develop a more significant digital value proposition, and adapt to the uncertainty of today's shifting business contexts more effectively.

Chapter 3 explores how digital business models come into being and how they develop over time. A focus on how digital business models form is important for theory and practice because managers and entrepreneurs cannot stop at identifying a particular digital business model design but must inevitably deliver digital strategy by creating and constantly developing digital business models. The chapter opens with a review of the two principal ways to design digital business models identified in prior literature: business model innovation and imitation (Ramon & Zhu, 2013). Both business model innovation and imitation are viable ways to form business models in the digital economy, and they are not mutually exclusive. Rather, they may be conceived as two ends of a continuum along which real-world strategies to design digital business models lie. This chapter integrates emerging and established research to develop this notion and explores strategies along the spectrum. These include pioneer, architect, blender, adapter, and copycat. The chapter also discusses some basic principles and underlying mechanisms behind these strategies. Finally, an agenda for future research on strategies to design digital business models is proposed.

The management literature has recently witnessed a considerable escalation of research around the implications of digitalization for firms and their environment. Yet, the conceptualization of the construct of digitalization remains elusive at best. In Chapter 4, the authors develop a taxonomy of the outcomes of the digitalization of physical reality, and of the interaction amongst digitalized units of physical reality (Lyytinen, 2021). The authors maintain that these taxonomies may enhance the scope for combining extant research in integrative frameworks as well as informing management research that links digitalization and its agency in a more systematic way.

In Chapter 5, the authors identified some key forces that influence the framing of business model choices of 14 important firms in the global messenger industry from 1998 to 2018. As suggested by the established literature, diversified large US firms (AOL, Yahoo!, Microsoft, Facebook, etc.) that entered this industry typically followed and firmly established advertising-supported business model choices in their other divisions. By contrast, Korean entrants adopted a complementor business model approach that successfully challenged US firms in their domestic markets. One such firm is Kakao Talk, which achieved significant financial success. The authors found that the successful strategies of Kakao Talk and other Asian firms (Line and Tencent's WeChat) have not been emulated by US firms. In this study, the authors examined the apparent cognitive motivations of US and Korean actors and determined their significance in our

understanding of the role of entrepreneurial spirit compared with corporate inertia in framing business model choices.

Freemium strategies (offering both a free and paid version) are a commonly used approach to sell digital goods (Sciglimpaglia & Raafat, 2020). Academic research into freemium strategies is distributed across disciplines, and each study typically focuses on a single type of freemium strategy within a specific context. Chapter 6 provides a review of the literature on freemium strategies, highlighting the central insights across these studies. The goal of this review is to provide a resource that researchers can use to gain an overview of research into this topic. The authors then discuss areas where there are opportunities for further exploration, and where the anecdotes that are often used to discuss freemium strategies and the reality of the academic literature do not align. The authors conclude by highlighting areas for future research into this domain.

Part 2, “Digital Strategy as Open Systems Design”, includes Chapter 7 through Chapter 12. Digital platform ecosystems are at the core of value creation in the digital era and a vital part of the digital strategy of firms. The generative nature of digital technologies makes it difficult for a platform sponsor to conceptualize and produce all potential product variations. Hence, co-creating value with autonomous third-party complementors is imperative (Cenamor, 2021). However, platform sponsors face unique uncertainties in enabling such value co-creation as often both the complementors and their value-enhancing complements are unknown *ex ante*. Chapter 7 demonstrates how platform scope, encompassing three elements - platform technology, sponsor, and market scope - helps the platform sponsor manage uncertainties in value co-creation by attracting the right set of complementors and fostering a predictable set of complements. The authors discuss the implications of the scope choices for value co-creation and digital strategy of firms and highlight key areas for future research.

In Chapter 8, the authors develop a typology of ecosystems based on insights from graph theory. The authors suggest that there are three archetypes of ecosystems: centralized, adaptive and decentralized. The authors suggest a tool called an “Ecosystem Canvas” that helps elucidate differences in these ecosystem configurations and business models. The authors conclude with insights for how ecosystem canvas can be used to both describe existing ecosystems and strategize about future ecosystems.

Digital peer-to-peer (P2P) platforms are an increasingly prevalent form of exchange that are becoming more diverse as they span across different industries. For the research on digital P2P platforms to move forward, it is important to have a clear view of what the authors understand under this type of platform and how the authors can systematically conceptualize their heterogeneous universe. Conceptual Chapter 9 has three objectives. First, it provides a definition of digital P2P platforms. Second, it develops a systematic classification of this type of platform based on three salient dimensions: (1) asset that underlies the transaction (physical, human, digital asset or money), (2) mode of transaction (only online or online plus offline) and 3) monetary compensation (present or absent). Third, it discusses the main strategic decisions of digital P2P platforms to attract, match and retain peer-providers and consumers.

To better understand the uniqueness and benefits of digital platforms, Chapter 10 provides a comprehensive overview of value conceptualizations in the digital platform literature and presents a framework for analyzing and strategizing platform business models. Structured by the value dimensions of the business model construct, the authors classify the value conceptualizations of the platform literature as sources of value creation, means of value delivery and mechanisms of value capture. Further, the authors discuss how and why these value dimensions are linked together in systematic relationships - what the authors term “value logics”. Value logics describe platform participants’ underlying beliefs about how platforms create value, including how the interplay of resources and capabilities affect value creation and delivery, and how value is captured both through efficiency measures and differentiating advantages. The authors exemplify with four fundamental value logics and identify if and how these are specific to platform business models compared to

traditional pipeline business models. Finally, the authors discuss how the value logics may be theorized using extant theory in strategic management, such as the firm positioning, resource-based and capability perspectives, and how research on platform-specific value logics may enrich these theoretical perspectives.

Competition among social media platforms underscores the need to find new sources of value and support differentiation strategies through service and features innovations. Traditional strategies, increasing switching costs, and generating value through versioning, have been standardized, and do not allow for differentiation among platforms. The backlash of penetration pricing and the artificial increase in switching costs for users are challenging established strategy tools. The authors have recently witnessed value generation from data of user interactions with the platform features, or from attracting user attention. These new sources of value build on user engagement with social media platforms. The emerging mechanisms generating value from user engagement intensify competition among social media platforms, and, at the same time, further differentiate platforms in the eyes of users. Each user engages with a variety of social media platforms, which is a strong indication that is used for different communication practices. Chapter 11 describes how user engagement strategies contribute to competition among social media platforms by shaping new communications practices which offer new value creation opportunities.

Most prior research on platform governance has focused on how large, central platform owners manage their ecosystems of third-party developers in a top-down fashion by setting, overseeing, and enforcing platform rules. Relative to the platform owner, each individual third-party appears small and insignificant. Even though third parties may be weak in isolation, Chapter 12 develops the idea that they can create a counterweight to the platform owner by joining forces and forming a movement. The authors explore this idea in the context of Apple's iOS ecosystem by investigating the attempts of various third parties to collectively protest and change Apple's business practices. Using mainly secondary data, the authors illustrate how a movement of third-party developers emerged between summer 2016 and summer 2021. Overall, our findings show how various individuals and organizations that were initially disconnected and isolated became part of an emerging social movement, whose constituents became increasingly interconnected and organized. The authors show how this movement forced Apple into changing some of its App Store rules and influenced regulatory initiatives in the EU and the US. The authors conclude with a brief discussion of implications for the platform governance literature, regulators, and practitioners.

Part 3, "Digital Strategy as Data Use", includes Chapter 13 through Chapter 16. In Chapter 13, the authors discuss the challenges digital data pose for strategizing. The nature and volume of available data, together with their modalities of production, circulation, and use, have changed dramatically over the last two decades. Much of digital data originates from fast, heterogeneous, and automated cycles of production that are outside the control of traditional expertise and call for new strategy tools and organizational capabilities. By drawing upon two case studies, the authors consider three takeaways for strategizing with data. First, the authors focus on the importance of implementing appropriate data work practices that respond to the novel characteristics of digital data. Second, the authors illustrate the constitutive role of data in creating and managing new kinds of complementarities in digital ecosystems whose dynamics cannot be explained by recourse to existing definitions. Third, the authors argue, ideas such as the existence of stable markets or that resources are clearly defined entities situated either outside or inside the boundaries of an organization hold less explanatory power today than they once did. This calls for a substantial reassessment of current approaches to regulation which seem to disregard the potential of data-based innovation and the change of framework it requires.

While companies are increasingly investing in data assets and practices, the competitive and regulatory environment is rapidly changing and creating uncertainty about business models for data products. In Chapter 14 the authors develop a conceptual framework to describe the economic characteristics of data products (in contrast to information products), highlighting the key attributes

that influence the creation and capture of value from data. The authors apply the framework to compare data products with content- and algorithm-based (e.g., software) information products to illuminate the strategic challenges of building competitive advantage in the data economy. The authors finish by reviewing feasible business models that address the tension between value creation and appropriation in commercializing data products.

Data - as a specific form of digital resource distinct from software - has become strategically important for individual firms and for supply chains, ecosystems, and platforms. Data is by nature nonrival; it does not lose value when shared, and in technical terms, data can be infinitely disseminated, combined, and used. Indeed, a particular dataset often gains in meaningfulness and value when combined and aggregated into actionable bundles such as “data objects” (e.g., user profiles, simulation models) or “information goods” (e.g., adverts) - a phenomenon the authors conceptualize as data complementarities. However, as data resources also entail competitive, legislative, and technical challenges - especially with regard to their mobility - the question of who captures value from data complementarities (and how) is a relevant concern. Chapter 15 describes a multi-level model for capturing value from four types of data complementarity: internal (hierarchy), relational (bilateral contractual relationship), supermodular (platform ecosystem), and unbounded (data markets).

Value creation in digital ecosystems entails bottlenecks among actors with heterogeneous interests and expectations. Data control is a critical element of digital strategy to remove bottlenecks and unleash value creation in the ecosystem. In Chapter 16, the authors focus on the formative stages of a cloud-based ecosystem to examine how actors coordinate data control activities to co-create value. The authors develop a conceptual model of data control coordination in cloud-based ecosystems by drawing on the formation of the EU GAIA-X ecosystem. Our model illustrates how data control is regulated and managed either within the firm’s hierarchy or within the ecosystem. It shows that coordination among actors across a cloud-based ecosystem starts by resolving data control bottlenecks in multilateral agreements before engaging in innovative activities that lead to value co-creation. Our model contributes to research on digital strategy by looking at data control coordination as a precursor to generating complementarities between ecosystem actors. This raises important implications for data strategies in digital ecosystems.

Part 4, “Digital Strategy and The New Managerial Imperatives”, includes Chapter 17 through Chapter 22. Legacy corporate governance has long been based on the “closed system” framework that is focused on the idea of aligning the interests of managers (agents) and shareholders (principals) through internal and external mechanisms and practices. The more recent “open system” approach to governance seems potentially more helpful to align different stakeholders when companies need to strategize and execute strategy in the new realities of openness, interdependencies, dynamism, and fluidity brought forward by digital technology diffusion and use. Chapter 17 builds on the “open system” approach and introduce the idea of a “open source” approach to corporate governance. This framework builds on two core principles: (a) the need of systematically increasing complementarities among internal and external stakeholders in both governance and strategy; and (b) the need for purposely balancing short-term compliance and long-term legitimacy among broader groups of the firm’s stakeholders. A key part of open-source governance is associated with a reliance on “strategic” rather than “financial controls” within the firm’s governance mechanism. The authors claim that these changes are needed if boards are to remain relevant and effective. The authors highlight a research agenda to develop the open-source corporate governance approach further.

The emerging information technologies, including artificial intelligence (AI) algorithms (e.g., machine learning) and big data (i.e., collecting large volumes of unstructured data translated through analysis to information suitable for managerial decision-making), have the potential to substantively change the established management practices globally. The AI systems trained on big data reduce the managerial bounded rationality problem, moving from satisficing to optimizing mode in managerial

decision making. In Chapter 18, the authors discuss the micro-foundational impact of these technologies on the process of managerial decision-making, stressing their ability to enable automated and augmented rationality. Then, the authors explore the impact of AI in four distinct domains of decision problems: determination, design, deliberation, and discovery. Finally, the developed micro-foundational framework is used to analyze the strategic impact of AI on organizational business models and sources of competitive advantage.

Chapter 19 aims to analyze firms' strategic use of advance analytics (AA) in order to understand their applications in business practice and relevant effects on their performance. Actually, after looking closely at the four main types of AAs (i.e., descriptive analytics, predictive analytics, prescriptive analytics, and automated analytics), the authors feature the key factors driving the performance effects of AAs (some sectors benefit more than others of the positive effects of using AAs, information intensity of each sector is capable of influencing the effect of AAs on firm performance, and large firms are usually the ones having more direct access to AA advantages vis-à-vis SMEs), and discuss the strategic advantages and disadvantages arising from the adoption of AAs. Then, the authors highlight the main characteristics of the application of AAs in four relevant economic sectors (i.e., Finance and Insurance, Manufacturing, Healthcare, and Logistics and Supply Chain). Finally, the authors draw some conclusions and gather a few lines for future research in the expanding AA-performance domain.

Firms across industries increasingly cooperate - they compete and cooperate with rivals. The proliferation of a new generation of digital technologies such as algorithms, big data, and platforms is not only reshaping the fabrics of firms but also how they cooperate. In Chapter 20, to provide guidance for cooperation in the digital age, the authors develop the concept of digital cooperation, show under which conditions digital cooperation becomes likely, and discuss how digital cooperation differs from traditional forms of cooperation. The authors further develop an agenda for further research and elaborate on why digital cooperation should be considered as a key building block of a firm's strategy.

Nowadays, many companies have digitalized their innovation processes to be more competitive in the market in which they operate. In parallel, open innovation has become a key component of companies' digital strategies as the companies' innovation processes require greater resources in the different implementation phases to capture and transfer knowledge within and outside the firm's boundaries. Despite the proliferation of studies analyzing open innovation and digital technologies, some scholars advocate that research could benefit from developing a better understanding of what features of open innovation may be critical for the design and implementation of digital strategies. In Chapter 21, the authors review recent studies on open innovation to shed more light on this unexplored issue. In particular, the authors submit three constructs of open innovation that companies should consider when they design, develop and implement digital strategies: (1) purposeful knowledge exchange, (2) business model alignment, and (3) strategic management of intellectual property. After, the authors validate the relevance of these constructs through three representative case studies of European companies that have opened up their innovation processes and benefited from the development of digital technologies (i.e., King of App, GoOpti, and Cynny). Drawing on a rich and detailed discussion of the selected cases, this chapter offers some theoretical contributions to open innovation and digital strategies literature, including future research questions, and also provides some managerial implications.

Chapter 22 discusses the evolving notion of digital strategy and its underpinning digital technologies, outlines an overarching framework for understanding the fundamental reasons why every organization needs a digital strategy, and explores the implications for incumbents and digital native firms alike competing in the digital age. The framework is based on two fundamental changes in the business environment: the changing nature of the economy and the rapid development of digital technologies. These changes together redefine the "rules of the game", forcing all organizations to evaluate and re-invent their strategies and business models by exploiting rapidly expanding digital

capabilities. As the digital and physical worlds are increasingly meshed into one, a new cyber-physical environment is emerging, which has profound implications for how digital strategy is developed, executed and evaluated. For business leaders, the main challenge is often not in generating more new ideas, but rather in effectively managing the transition to new technologies, new strategies and business models, and new organizational designs. The theoretical contributions are discussed and three new areas for future research are highlighted.

This publication received rave reviews from many scholars. Kathleen M. Eisenhardt, co-author of *Simple Rules and Competing on the Edge*, Stanford University, commented "A tour-de-force! The *Research Handbook on Digital Strategy* offers a tantalizing buffet of rich perspectives. By unpacking how digital strategy is reshaping the fundamental rules of competition and cooperation, the authors provide compelling insights into the next generation of strategies. Highly relevant for firms ranging from established multi-nationals to the newest tech ventures".

Ron Adner, Dartmouth College, said "The era of digital transformation requires an updated examination of strategy fundamentals. The *Research Handbook on Digital Strategy* presents a timely, thoughtful, and thought-provoking set of studies and perspectives that helps move the conversation forward in meaningful ways. The editors have assembled a robust collection of experts and essays that will deliver valuable insight to every interested reader".

David J. Teece, University of California, Berkeley, gave the review "An excellent atlas of digital transformation which enables the reader to appreciate the differences between industrial age and digital age competition. The multilayered and multifaceted nature of big data and digital strategy is explained without clutter by well grounded managerial scholars".

This timely *Research Handbook* will be an invaluable tool for students and scholars of strategic management, international management, entrepreneurship, and technology and innovation management. Its discussion of how digital strategy relates to traditional strategy frameworks will also benefit executives, entrepreneurs, and consultants with an interest in better understanding the state of the art of digital strategy.

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