6-18-2022

Business Model Configurations for Digital Platform Success - Towards a Typology of Digital Platform Business Models

Timo Phillip Böttcher
Technical University of Munich, timo.boettcher@tum.de

Valentin Bootz
Technical University of Munich, v.bootz@tum.de

Norman Schaffer
fortiss GmbH, schaffer@fortiss.org

Jörg Weking
Technical University of Munich, joerg.weking@tum.de

Andreas Hein
Technical University of Munich, andreas.hein@in.tum.de

BUSINESS MODEL CONFIGURATIONS FOR DIGITAL PLATFORM SUCCESS – TOWARDS A TYPOLOGY OF DIGITAL PLATFORM BUSINESS MODELS

Research in Progress

Timo Phillip Böttcher, Technical University of Munich, Garching, Germany, timo.boettcher@tum.de

Valentin Bootz, Technical University of Munich, Garching, Germany, v.bootz@tum.de

Norman Schaffer, fortiss GmbH, Munich, Germany, schaffer@fortiss.org

Jörg Weking, Technical University of Munich, Garching, Germany, joerg.weking@tum.de

Andreas Hein, Technical University of Munich, Garching, Germany, andreas.hein@tum.de

Abstract

Competition between digital platforms is harder compared to non-platform businesses. Fierce platform competition reduces digital platforms' chances of success. Research has identified many aspects of digital platforms and their surrounding ecosystem that influence the success of digital platforms. This research is comprehensive but not integrated. The business model as an activity system provides a lens to orchestrate various dimensions of digital platforms. We conduct a case survey of published case studies on digital platforms and analyze their business models using a multi-value qualitative comparative analysis. The resulting business model configurations reveal how surviving digital platforms combine different value propositions, value capture mechanisms, and value creation strategies. We identify four configurations of digital platform business models (matching, spreading, innovating, and dominating business models) leading to digital platform success (i.e., survival). In our future research, we will identify more detailed business model configurations using a larger case sample.

Keywords: Business Model, Digital Platform, Digital Platform Success, Case Survey, QCA.

1 Introduction

Competition between digital platforms is hard. Usually it is harder compared to non-platform businesses. If you need a taxi anywhere, you do not care about which taxi company operates the particular car, so you just take the nearest one. Thus, there is enough room for customers to switch easily between different providers. For digital platforms, competition is different (Van Alstyne et al., 2016, Parker et al., 2016). If you use a digital ride-hailing platform, such as Uber, you still do not care about the particular driver as long as the service is fast, cheap, and the driver's raiting is high enough. Uber's concern is, that you use the Uber platform, and the Uber platform only. It is easy for customers to switch between digital platforms such as Uber, Lyft, or Sidecar, leading to fierce competition between digital platforms that ultimately leads to winner-takes-all or few-takes-all markets, limiting the success and even survival of digital platforms (Eisenmann et al., 2006, Schilling, 2002). For example, Uber and Lyft are the only major platforms remaining in the US ride-hailing market, forcing Sidecar to close in 2015.

Ensuring and increasing digital platform usage is critical to the success of digital platforms. In doing so, digital platforms aim to create network effects, prevent customers and complementors from using

multiple platforms, and ultimately, like Uber and Lyft, achieve market dominance (Alt and Zimmermann, 2019). Therefore, digital platforms leverage several different strategic and operational measures (Tiwana, 2014). The key challenges any digital platform faces are choosing the right ecosystem complementors (Evans, 2009), generating cost-exceeding revenue, and cultivating a platform ecosystem (Cusumano et al., 2020). Network effects and ecosystem dynamics are critical considerations in digital platform strategy (Cennamo and Santalo, 2013). For example, two-sided network externalities explain the emergence of dominant platforms due to direct and indirect network effects (Rochet and Tirole, 2003). However, this first requires attracting complementors or customers to the digital platform ecosystem. Some digital platforms use different pricing mechanisms, such as asymmetric pricing, where they charge proportionately less from one side of the platform than the other. Subscription models allow them to generate recurring revenue and retain customers, but transaction-based pricing offers a potentially cheaper option for customers. Other digital platforms compete by offering unique features, products, or services that digital platforms seek to differentiate themselves from their competitors. Thus, there are numerous opportunities to gain a competitive advantage, that require highly interdependent management (Helfat and Raubitschek, 2018).

However, the unheard success of a few platform companies serving as a paragon for firms to launch new digital platforms (Zhao et al., 2020) or the failure of many others cannot be fully exaplined by single influencing factors or conditions. Consequently, we have yet to gain generalizable insights into how the different success and performance mechanisms, identified in the research, should be orchestrated (McIntyre and Srinivasan, 2017).

Yet, many of the aforementioned measures can be orchestrated in the business model (BM) of a digital platform (Amit and Zott, 2001, Helfat and Raubitschek, 2018). The BM consists of the value proposition, the value creation, and the value capture (Teece, 2010, Osterwalder and Pigneur, 2010). It is proven to be a source of competitive advantage and influence on firm performance and survival (Böttcher et al., 2021a, Böttcher et al., 2021b, Weking et al., 2019). The attractiveness of a digital platform is influenced by the value proposition for customers and complementors, such as unique features. Value creation is achieved through the engagement of complementors and the use of the ecosystem (Hein et al., 2020, Hein et al., 2019). Asymmetric pricing or subscription models are part of value creation. Thus, the BM allows holistic and integrative thinking in complex socio-technical systems such as digital platform ecosystems (Benbya et al., 2020) by creating an activity system that orchestrates interdependent organizational activities transcending the focal firm and spans its boundaries in its ecosystem (Zott and Amit, 2010). Through different activity combinations (i.e., BM configurations), the success mechanisms of digital platforms can be orchestrated in the BM.

Despite enhancing our understanding of managing digital platforms, digital platform research is often limited to single-industry settings or narrative cases. Thus, digital platform performance may require attention to a holistic perspective rather than focusing on individual design elements (Zhao et al., 2020). Existing research on digital platform BMs is largely scattered. Few exceptions are taxonomies of platform-based marketplaces as BMs (cf. Täuscher and Laudien, 2018) and frameworks to understand platform BMs from a systemic perspective (cf. Fehrer et al., 2018). Yet, variables are mostly analyzed in isolation, a holistic approach that enables to understand what BM configurations constitute succesfull platforms is missing. Hence, we propose the following research question: *What are the BM configurations of surviving digital platforms?*

We identify configurations (Fiss, 2011) to platform success from a BM perspective. Therefore, following Rivard and Lapointe (2012), we combine the case survey methodology (Larsson, 1993) with qualitative comparative analysis (QCA) (Fiss, 2011, Ragin, 1987). This combination and QCA, in particular, allow us to identify salient configurations of the different BM design elements that constitute surviving digital platform BMs. We identify 25 surviving and 7 failed digital platforms in the literature and analyze them toward the three BM dimensions: value proposition, value capture, and value creation. Thus, we identify four BM configurations of surviving digital platforms. In our future research, we will take a multi-method approach. First, we will extend our case sample with additional digital platforms to refine our configurations. We will collect the data about these additional platforms from empirical

observations and secondary data, such as firm reports, press releases, and news articles. Second, we will discuss and analyze the configurations in expert interviews to refine our understanding of why these configurations manifest surviving digital platform BMs. Finally, we will develop a typology of digital platform BMs that articulates ideal types of digital platform BMs.

2 Platform Business Models

The literature lacks a general definition of platform BMs (Fehrer et al., 2018), but agrees they can be conceptualized based on the enablement of different user groups to interact via a platform (Gawer, 2014), to create and derive super-additive value (Clemons, 2018). This follows the three core dimensions a BM can be divided into: value proposition, value capture, and value creation. The value proposition dimension is the product or service offered by a firm that addresses the market's desired value (Al-Debei and Avison, 2010). The value capture dimension describes how this focal firm captures economic value from its value proposition (Al-Debei and Avison, 2010). The value-creation dimension articulates the activities that enhance the total value created by the BM (Amit and Zott, 2001).

The value proposition of digital platforms can be described in three basic types: transaction platforms, innovation platforms, and hybrids (Evans and Gawer, 2016). *Transaction platforms* propose value by serving as intermediaries for transactions between ecosystem actors, such as exchanging goods or services between buyers and sellers. For example Airbnb does not offer housing itself; it is the intermediary bringing the two sides of the market together, which is a two-sided market BM. The value proposed by *innovation platforms* is their technological foundation for complementary innovation (Gawer, 2021). Complementors (e.g., customers or third-party developers) can create innovative products or services without the need to develop this foundation themselves. For example cloud platforms offer that type, such as Microsoft Azure, which allows complementors to use computational power and predefined functions that simplify application development at low cost. In between these two types, hybrid *platforms* combine intermediary functions and complementary innovation to integrate transaction and innovation platforms (Cusumano et al., 2019). For example, Facebook's social network itself is a transaction platform enabling communication between users. When it opened the social network for third-party developers (e.g., through application programming interfaces (APIs)), it became a hybrid platform (Cusumano et al., 2020).

Value capture strategies for generating cost-exceeding revenue are indispensable for firm success (Teece and Linden, 2017). However, for digital platforms, competition is often based on the price charged for the platform's value proposition in order to attract as many customers and complementors as possible to the platform's ecosystem. The pricing of digital platforms is itself subject to complex interdependencies; hence, we refer to Rochet and Tirole (2006) for a detailed analysis. The value capture dimension to the platform BM must balance the profitability of both the platform owner and its complementors without alleviating incentives to co-create value (Schreieck et al., 2017). To address this challenge, digital platforms offer subsidized or free services to one side of the platform and capture economic value from the other (Hagiu, 2015). A digital platform directly captures value from its complementors and customers mainly via subscriptions or transaction-based pricing (Rochet and Tirole, 2003, Armstrong, 2006, Weyl, 2010). For example, Alibaba offers different subscription plans for sellers to obtain access to the Alibaba marketplace. Differently, Groupon charges transaction fees based on how many deals were sold. Further, digital platforms capture economic value from data by either selling the data to customers and complementors or using the data to improve the digital platform's operations, productivity, and products (Najjar and Kettinger, 2014, Gandhi et al., 2019). For example, Google uses users' search data to create targeted advertisements sold to complementors at higher prices.

The value creation of digital platforms primarily arises through their ecosystem. For example, eBay without the products offered by complementors for auctions does not create any value. To create value for the digital platform, the platform owner must effectively position its BM among its complementors and competitors (Cusumano and Gawer, 2002). Therefore, the digital platform must propose and create a differentiating value for its ecosystem participants, especially its complementors. Three strategies to

create such value can be identified: coring, tipping, and envelopment (Gawer and Cusumano, 2008). These strategies build on the four sources of value creation (i.e., novelty, lock-in, complementarities, and efficiency) identified by Amit and Zott (2001). *Coring* adds complementary functionalities to the platform itself that fosters value creation by complementors. For example, Apple adds function bundles (e.g., HomeKit or the ARKit) to iOS that help developers create innovative apps efficiently. It creates lock-in effects between the digital platform and its complementors, thereby maintaining value creation. *Tipping* describes the platform owner's activities to shape the ecosystem dynamics in favor of its own platform. This means the platform tries creating and leveraging market momentum for its own advantage. This strategy includes implementing subsidy mechanisms and incentives to attract complementors or users and forming coalitions. Uber created momentum by focusing on exclusive ride experiences that spread by word of mouth, attracting more customers, who in turn attracted more riders, and so on. *Envelopment* refers to the strategy of entering adjacent platform ecosystems to create novel superior value (e.g., higher efficiency) for a shared user base in a multi-platform bundle; as such, a bundle also creates lock-in effects (Eisenmann et al., 2006, Eisenmann et al., 2011, Böttcher et al., 2021c). Besides joining forces with other platforms, envelopment also refers to extending own platform to provide functionalities found in adjacent platform ecosystems. For example, LinkedIn used to be only a social network focused on professional relationships. Over time, it extended its functionalities to a job application platform competing with, for example, indeed.com and a learning platform competing with Udemy, Coursera, and others.

3 Methodology

Following Rivard and Lapointe (2012), we combine the case survey method (Larsson, 1993) for data collection with QCA for the data analysis. This integrated approach highlights the strengths of both methods while simultaneously overcoming their limitations when applied individually. The case survey method presents a powerful approach for synthesizing qualitative insights into quantitative results (Larsson, 1993). Much empirical evidence in information system (IS) research is embodied in case studies; therefore, the case survey is suitable for this research's holistic, aggregative approach. QCA is a suitable method for capturing the interdependencies and complexity of digital platform ecosystems into generalizable insights (El Sawy et al., 2010, Benbya et al., 2020). It allows us to combine different aspects contributing to digital platforms' success into a holistic, configurational solution.

We collected our sample of case studies following the search process for systematic literature reviews (Webster and Watson, 2002). Our search query was centered around the terms "case," "business model," and "digital platform" in the title, abstract, or keywords of peer-reviewed scientific articles. We also accounted for interchangeably used terms (e.g., ecosystem and market). The search query was defined as: TS=(((digital OR *sided) NEAR/2 (platform OR market OR ecosystem)) AND case AND "business model*"). We run our search query in three scientific databases: the AIS eLibrary, Web of Science, and Scopus. The search was performed in December 2020. The databases returned 228 articles (Scopus: n = 110, Web of Science: n = 58, AIS: n = 60). After removing 36 duplicates, 192 unique articles remained.

We defined inclusion and exclusion criteria to select cases that address our research goal and ensure sufficient detail (Larsson, 1993). The criteria addressed the articles' methodology, their unit of analysis, and their description of the platform's BM. Table 1 presents the applied inclusion and exclusion criteria. In the first step, we excluded 94 articles based on their title and abstract. In a second step, we evaluated the cases based on the full texts of the articles. Therefore, we summarized the information of the cases covered in multiple articles, such as Microsoft Azure in Gustavsson and Ljungberg (2019) and Harmon and Castro-Leon (2018) and differentiated the individual cases from multiple case studies, such as Constantiou et al. (2017). This eliminated an additional 62 cases. For the final sample of 32 cases, from 32 articles, we aimed for data triangulation by enhancing the case study data with publicly available information from platform owners' press releases, articles in relevant newspapers, and public interviews with informed experts.

Method-ology	Inclusion	The research design is centered around a systematic analysis of a particular case in considerable depth i.e. a case study
	Exclusion	The ability to derive universally applicable knowledge is limited (lack of generalizability)
Unit of analysis	Inclusion	The case study examines one or multiple cases where digital platforms are the primary unit of analysis
	Exclusion	The unit of analysis does not classify as a (digital) platform as commonly defined in IS and related subject areas
Business Model	Inclusion	The digital platforms are linked to adequatly detailed business models or aspects of it
	Exclusion	Highly contextual or narrow analysis are incompatible with a holistic configurational perspective on business models

Table 1. Inclusion and exclusion criteria.

Condition	Value (Code)	Definition	Example	n
Value Proposition	Transaction (0)	Transaction platforms serve as intermediaries for exchanges of goods, services, or information (Cusumano et al., 2019)	Airbnb	23
	Innovation (1)	Innovation platforms facilitate the development of complementary products or services that add functionality or assets to the platform (Cusumano et al., 2019)	Microsoft Azure	5
	Hybrid (2)	Hybrid strategies combine intermediary function and complementary innovation to integrate transaction and innovation platforms (Cusumano et al., 2019)	Android	4
Value Capture	Subscription (0)	Subscription models capture value through lump-sum fees for market access (Armstrong, 2006)	Alibaba	9
	Interaction (1)	Interaction-based models capture value through fixed or proportional fees per interaction (Weyl, 2010)	Groupon	19
	Data Monetization (2)	Data monetization strategies use the intangible value of data as a primary asset by selling it, converting it into other tangible benefits, or avoiding cost (Najjar and Kettinger, 2014)	Facebook	4
Value Creation	Coring (0)	Coring implements elements (technology, product, or service) in the platform's core that solve problems of complementors or customers (Gawer and Cusumano, 2008)	Apple iOS	10
	Tipping (1)	Tipping builds momentum by developing unique and hard-to-imitate features (Gawer and Cusumano, 2008)	Uber	9
	Envelopment (2)	Platform envelopment extends the platform's original functionality to enter an adjacent market to bundle functionalities on one platform (Eisenmann et al., 2011)	LinkedIn	13
Outcome	Survival (1)	Survival is defined as the persistence of the digital platform	Quealth	25
	Failure (0)	Failure is defined as a discontinuance, bankruptcy, or retrenchment of the platform.	Glase	7

Table 2. Coding scheme.

We designed the coding scheme to describe the core elements of the BM based on extant literature. We did not adapt existing taxonomies on digital platform BMs, such as Täuscher and Laudien (2018), because their level of detail conflicts with the number of conditions that can be used in a QCA with our sample size. Thus, the coding scheme focuses on the aforementioned three core dimensions of the BM (i.e., our conditions for the QCA). Each condition can take on one of three values. These values are

mutually exclusive and non-hierarchical. Based on the collected case information, we have assigned exactly one value to each case for each condition. For the outcome (i.e., the dependent variable), we define whether a digital platform survived or failed. Survival means that the digital platform was still active and online at the time of our analysis. Failure means that the digital platform was no longer active for some reason. Hence the outcome is coded binary (i.e., "1" indicating survival, "0" indicating failure) Table 2 shows our coding scheme and includes a definition, example, and number of cases (n) of each possible value that a condition can take on. Two authors coded the cases independently and discussed discrepancies afterward until a mutual agreement was reached.

We analyze our coded dataset using multi-value QCA (mvQCA) (Ragin, 1999, Cronqvist and Berg-Schlosser, 2009), since our coding scheme implies a nominal scale of three non-hierarchical conditions. For the application of the mvQCA we follow the guidelines provided by Mattke et al. (forthcoming). We analyzed our data for necessary conditions using a consistency threshold of 0.90 and a coverage threshold of 0.60 (Mattke et al., forthcoming), but found none. Consistency describes how well a solution represents the cases. Coverage describes how many cases are represented by the solution. To identify sufficient configurations, we set the consistency threshold to 0.70 and the minium cases to be included in a configuration to n = 2 (Schneider and Wagemann, 2010, Mattke et al., forthcoming). We deducted the intermediate and the parsimonious solutions to identify core and peripheral conditions in our configurations (Fiss, 2011). We then qualitatively analyzed the resulting configurations by revisiting the case information and associated theory to understand the configurations and explain their success factors (Park et al., 2020).

4 Results

Surviving digital platforms (n = 25)					**Failed digital platforms (n = 7)**	
Airbnb	Cyworld.com	Groupon	Money Forward	Udemy	Zimride	Watson Health
Alibaba.com	Damai	Handy.com	Pingit	Wishberry	ResQ Club	Figayou
Amazon.com	Facebook.com	Hotel.de	Quealth	xBed	Wikitribune	CrowdSpirit
Apple iOS	goCatch	InnoCentive	TradeLens		Take Eat Easy	Glase
Beam Wallet	Google	Microsoft	Uber			
Coursera	Android	Azure				

Table 3. Overview of case sample.

Table 3 presents the digital platforms included in our final case sample. The mvQCA revealed four configurations explaining surviving digital platform BMs (Table 4). The configurations show which BM dimensions are combined by surviving digital platforms. In sum, the configurations explain 84% of the variance in our dataset. The overall solution has a consistency of 0.884, which is above the suggested threshold of 0.80 and thus expresses a robust empirical foundation in our case sample (Ragin, 2009). Hence, our solution quality is comparable to other IS and strategy research, for example, Park et al. (2017), Fiss (2011), and Lee et al. (2019).

After qualitatively analyzing the resulting configurations, we gave them a name to describe their BM configuration. *Matching* BMs are transaction platforms implementing a tipping value creation strategy. They facilitate transactions between different ecosystem actors, such as the exchange of goods or services. Moreover, these models differentiate through the provision of unique features on the platform, such as unique products. *Spreading* BMs spread across adjacent markets and envelop multiple platforms in one ecosystem. These BMs capture their value per interaction on their digital platforms, such as per ride or food order. This is common for transaction platforms. However, for matching BMs, this is not a core condition. Surviving matching BMs follow different value capture strategies. The envelopment strategy for value creation is another difference between matching and spreading BMs. An *innovating* BM provides technological affordances on a digital platform for complementors to engage in innovation. Thus, coring creates more value to the digital platform by adding more elements fostering innovation. Moreover, interaction-based value capture is a peripheral condition. Many of these BMs charge users and complementors based on the actual use of the digital platforms' features (i.e., per interaction with

the platform's elements). *Dominating* BMs rely on a hybrid value proposition. The value proposition is the only core condition for success, whereas monetizing data and value creation by envelopment are only peripheral conditions. A dominant BM is supported by envelopment by creating a digital platform ecosystem that combines solutions from the best of different worlds for many customer-related problems. The dominance then leads to a vast amount of data created on the digital platform that can be leveraged for value capture.

		Configurations			
Dimension	**Condition**	**Matching**	**Spreading**	**Innovating**	**Dominating**
Value Proposition	Transaction	●	●		
	Innovation			●	
	Hybrid				●
Value Capture	Subscription				
	Interaction		●	•	
	Data Monetization				•
Value Creation	Coring			●	
	Tipping	●			
	Envelopment		●		•
Consistency		.786	1.000	1.000	0.750
Solution Coverage		.440	0.160	0.120	0.120
Unique Coverage		.440	0.160	0.120	0.120
Overall Solution Consistency		0.884			
Overall Solution Coverage		0.840			
Big circles "●" indicate core conditions, and small circles "•" indicate peripheral conditions.					

Table 4. Business model configurations sufficient for digital platform survival.

5 Discussion

The mvQCA reveals four BM configurations (i.e., matching, spreading, innovating, and dominating) of surviving digital platforms. Matching BMs are efficiency-centered and hence designed to achieve greater efficiency by reducing transaction costs. This often introduces novelty through the adoption of new activities and new ways of linking and governing the activities. Thus, matching platforms benefit from first-mover advantages in new markets such as hospitality (e.g., Airbnb) or group-buying (e.g., Groupon). However, matching BMs like Groupon becomes vulnerable to imitators (e.g., later acquired CityDeal and LivingSocial) and envelopment attacks (e.g., the launch of Google Offers after Google's $6 billion bid to acquire Groupon in 2010) because of low technological innovation. Hence, using tipping strategies such as engaging in mergers and acquisitions, boosting growth through heavy marketing spending, and investing in platform design to tip the market in their favor is key to platform success (Zhou et al., 2020).

Whereas Matching BMs try developing unique digital platforms, spreading BMs follow an envelopment strategy: They spread their platforms across multiple markets. Lock-in effects of their core platform enable them to envelop adjacent markets and thus provide complementarities to customers and complementors. For example, Uber built a digital platform for luxury rides, expanding the value proposition to any type of ride-hailing. Then, leveraging the extensive network of locked-in drivers and customers, Uber enveloped a food delivery BM (i.e., UberEats). Although some failed cases for matching BMs have been observed, a surviving digital platform BM was created via a platform with the power to create additional value through platform envelopment.

Innovating BMs create the technological foundation for complementary innovation. They solve business problems and enable add-ons to the platform's core through third parties as an alternative to developing the foundation themselves. Innovation platforms, such as Microsoft Azure, further offer scalability and low barriers to entry with flexible pricing plans. They combine ready-to-use platform features (e.g., Azure Cognitive Services for artificial intelligence) and APIs for custom solutions to attract customers. Microservice architectures and pay-as-you-go pricing enable value capture on a per-interaction basis. Strategic focal points are structuring the platform core and periphery and governing external partners (Böttcher et al., 2021c). The technological measures of BMs designed to create high switching costs are intellectual property protection in the platform core and maintaining interdependencies between the platform and complementors (Gawer and Cusumano, 2008, Zott and Amit, 2010).

Dominating BMs very successfully combine transaction and innovation platforms in a complex two-in-one value proposition. This requires adequate resources and capabilities. Once successful, they dominate their industry, such as the duopoly of Apple iOS and Google Android operating systems with little space for competing platforms, such as Windows Phone or Blackberry. An envelopment strategy supports this dominance. For example, Apple creates a seamless integration between its platforms iOS, Apple Music, AppleTV, and Apple Arcade with powerful lock-in effects. Value capture through data monetization is a side product as the amount of data collected on these hybrid platforms is enormous.

5.1 Initial Contributions and Future Research

Although this research is still in progress, we make initial contributions to research and practice. We identify BM configurations of surviving digital platforms. The configurations show how different value propositions are better combined with specific value creation strategies. The study further extends the correlation between BM design and product market strategies (Zott and Amit, 2008) toward digital BMs. In contrast to contexts, such as mobile app business models, where the value capture element is a source of competitive advantage (Tidhar and Eisenhardt, 2020, Rietveld, 2018), the configurations reveal that value capture may be less important in digital platform BMs, implying the incapacity of digital platforms to differentiate based on the value capture. Value capture is often not a core condition for platform success. Our chosen methodology addresses calls in recent research for generalizable insights into BMs of digital platforms (Zhao et al., 2020). For practice, the findings imply to design their strategy based on their BM (Lanzolla and Markides, 2021). Depending on the type of BM the strategy for growth and competitive advantage shall differ.

In future research, we will develop a typology of digital platform BMs. To do this, we will use a multi-method approach. We will expand our case sample with additional cases based on empirical observation and secondary data. Currently, our sample consists only of cases published in academic articles. This limits our sample size and introduces bias that is common in research articles on surviving digital platforms. With additional cases, we can balance the dataset between surviving and failed cases. This will help identify the BM characteristics and configurations that differentiate successful and failed digital platforms, thus develop and explain ideal types of digital platform BMs. In addition, mvQCA only allows for as many conditions as can theoretically be represented as configurations in the case sample. With a larger case sample, more conditions can be included in the mvQCA, such as value delivery, the role of the digital platform ecosystem, and control variables such as industry and digital platform maturity. The resulting BM configurations will be examined for configurations of ideal types. Through interviews with experts from digital platform companies, we will refine these ideal types to better understand why these configurations represent ideal types of successful BMs on digital platforms. In combination, this will enable the development of a typology of digital platform BMs.

6 Acknowledgements

The authors would like to thank the track chairs, editors and all anonymous reviewers for their helpful comments and suggestions. We thank the German Federal Ministry for Economic Affairs and Energy for funding this research as part of the project 01MK20001B (Knowledge4Retail).

References

Al-Debei, M. M. and D. Avison (2010). "Developing a unified framework of the business model concept." *European Journal of Information Systems* 19 (3)**,** 359-376.

Alt, R. and H.-D. Zimmermann (2019). "Electronic Markets on platform competition." *Electronic Markets* 29 (2)**,** 143-149.

Amit, R. and C. Zott (2001). "Value creation in E-business." *Strategic Management Journal* 22 (6-7)**,** 493-520.

Armstrong, M. (2006). "Competition in Two-Sided Markets." *The RAND Journal of Economics* 37 (3)**,** 668-691.

Benbya, H., N. Nan, H. Tanriverdi and Y. Yoo (2020). "Complexity and Information Systems Research in the Emerging Digital World." *MIS Quarterly* 44 (1)**,** 1-17.

Böttcher, T., R. Al Attrach, F. Bauer, J. Weking, M. Böhm and H. Krcmar. "Why Incumbents Should Care–The Repercussions of FinTechs on Incumbent Banks." 25. Pacific Asia Conference on Information Systems. 2021a Virtual.

Böttcher, T., V. Bootz, T. Zubko, J. Weking, M. Böhm and H. Krcmar. "Enter the Shark Tank: The Impact of Business Models on Early Stage Financing." 16. International Conference on Wirtschaftsinformatik. 2021b Duisburg-Essen, Germany.

Böttcher, T., D. A. Phi, R. Flötgen, J. Weking and H. Krcmar. "What Makes an Innovative Business Model? Evidence From the 70 Most Innovative Firms." 27. Americas Conference on Information Systems. 2021c Virtual.

Cennamo, C. and J. Santalo (2013). *Platform competition: Strategic trade-offs in platform markets.* Chichester, UK: John Wiley & Sons.

Clemons, E. K. (2018). *New Patterns of Power and Profit: A Strategist's Guide to Competitive Advantage in the Age of Digital Transformation.* Springer.

Constantiou, I., A. Marton and V. K. Tuunainen (2017). "Four models of sharing economy platforms." *MIS Quarterly Executive* 16 (4).

Cronqvist, L. and D. Berg-Schlosser (2009). Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques. Thousand Oaks, California: SAGE Publications, Inc.

Cusumano, M. A. and A. Gawer (2002). "The elements of platform leadership." *MIT Sloan Management Review* 43 (3)**,** 51-58.

Cusumano, M. A., A. Gawer and D. B. Yoffie (2019). *The Business of Platforms: Strategy in the Age of Digital Competition, Innovation and Power.* Harper Business.

Cusumano, M. A., D. B. Yoffie and A. Gawer (2020). "The Future of Platforms." *MIT Sloan Management Review* 61 (3)**,** 46-54.

Eisenmann, T., G. Parker and M. Van Alstyne (2006). "Strategies for Two-Sided Markets." *Harvard Business Review* 84 (10).

Eisenmann, T., G. Parker and M. Van Alstyne (2011). "Platform envelopment." *Strategic Management Journal* 32 (12)**,** 1270-1285.

El Sawy, O. A., A. Malhotra, Y. Park and P. A. Pavlou (2010). "Research Commentary—Seeking the Configurations of Digital Ecodynamics: It Takes Three to Tango." *Information Systems Research* 21 (4)**,** 835-848.

Evans, D. S. (2009). How catalysts ignite: the economics of platform-based start-ups. *Platforms, markets and innovation.* Cheltenham, UK and Northampton, US: Edward Elgar

Evans, P. C. and A. Gawer (2016). The rise of the platform enterprise: A global survey. University of Surrey.

Fehrer, J., H. Woratschek and R. Brodie (2018). "A systemic logic for platform business models." *Journal of Service Management* 29**,** 546-568.

Fiss, P. C. (2011). "Building Better Causal Theories: A Fuzzy Set Approach to Typologies in Organization Research." *Academy of Management Journal* 54 (2)**,** 393-420.

Gandhi, S., B. Thota, R. Kuchembuck and J. Swartz (2019). "Demystifying Data Monetization." *MIT Sloan Management Review* 82 (1)**,** 48-58.

Gawer, A. (2014). "Bridging differing perspectives on technological platforms: Toward an integrative framework." *Research Policy* 43 (7)**,** 1239-1249.
Gawer, A. (2021). "Digital platforms' boundaries: The interplay of firm scope, platform sides, and digital interfaces." *Long Range Planning* 54 (5)**,** 102045.
Gawer, A. and M. A. Cusumano (2008). "How companies become platform leaders." *MIT Sloan Management Review* 49 (2)**,** 28-35.
Gustavsson, M. and J. Ljungberg. "Platformization of a cloud service." 40th International Conference on Information Systems (ICIS). 2019 Munich, Germany.
Hagiu, A. (2015). "Strategic Decisions for Multisided Platforms." *MIT Sloan Management Review* Top 10 Lessons on Strategy**,** 4-13.
Harmon, R. R. and E. G. Castro-Leon. "Service innovation in the cloud: Implications for strategy development." 2018 Portland International Conference on Management of Engineering and Technology (PICMET). 2018 Honolulu, USA. IEEE.
Hein, A., M. Schreieck, T. Riasanow, D. S. Setzke, M. Wiesche, M. Böhm and H. Krcmar (2020). "Digital platform ecosystems." *Electronic Markets* 30 (1)**,** 87–98.
Hein, A., J. Weking, M. Schreieck, M. Wiesche, M. Böhm and H. Krcmar (2019). "Value co-creation practices in business-to-business platform ecosystems." *Electronic Markets* 29 (3)**,** 503-518.
Helfat, C. E. and R. S. Raubitschek (2018). "Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems." *Research Policy* 47 (8)**,** 1391-1399.
Lanzolla, G. and C. Markides (2021). "A Business Model View of Strategy." *Journal of Management Studies* 58 (2)**,** 540-553.
Larsson, R. (1993). "Case Survey Methodology: Quantitative Analysis of Patterns Across Case Studies." *Academy of Management Journal* 36 (6)**,** 1515-1546.
Lee, J.-N., Y. Park, D. W. Straub and Y. Koo (2019). "Holistic Archetypes of IT Outsourcing Strategy: A Contingency Fit and Configurational Approach." *MIS Quarterly* 43 (4)**,** 1201-1226.
Mattke, J., C. Meier, T. Weitzel, J. Gerow and J. B. Thatcher (forthcoming). "Qualitative Comparative Analysis (QCA) In Information Systems Research: Status Quo, Guidelines, and Future Directions." *Communications of the AIS*.
McIntyre, D. P. and A. Srinivasan (2017). "Networks, platforms, and strategy: Emerging views and next steps." *Strategic Management Journal* 38 (1)**,** 141-160.
Najjar, M. and W. Kettinger (2014). "Data Monetization: Lessons from a Retailer's Journey." *MIS Quarterly Executive* 12 (4)**,** 213-225.
Osterwalder, A. and Y. Pigneur (2010). *Business model generation: a handbook for visionaries, game changers, and challengers.* Amsterdam: Wiley.
Park, Y., P. Fiss and O. Sawy (2020). "Theorizing the Multiplicity of Digital Phenomena: The Ecology of Configurations, Causal Recipes, and Guidelines for Applying QCA." *MIS Quarterly* 44**,** 1493-1520.
Park, Y., O. Sawy and P. Fiss (2017). "The Role of Business Intelligence and Communication Technologies in Organizational Agility: A Configurational Approach." *Journal of the Association for Information Systems* 18 (9)**,** 648-686.
Parker, G. G., M. W. Van Alstyne and S. P. Choudary (2016). *Platform revolution: How networked markets are transforming the economy and how to make them work for you.* WW Norton & Company.
Ragin, C. (1987). "The comparative method: Moving beyond qualitative and quantitative methods." *Berkeley: University of California*.
Ragin, C. C. (1999). "Using qualitative comparative analysis to study causal complexity." *Health Services Research* 34 (5)**,** 1225-1239.
Ragin, C. C. (2009). *Redesigning social inquiry: Fuzzy sets and beyond.* University of Chicago Press.
Rietveld, J. (2018). "Creating and capturing value from freemium business models: A demand-side perspective." *Strategic Entrepreneurship Journal* 12 (2)**,** 171-193.
Rivard, S. and L. Lapointe (2012). "Information Technology Implementers' Responses To User Resistance: Nature And Effects." *Mis Quarterly* 36 (3)**,** 897-920.

Rochet, J.-C. and J. Tirole (2003). "Platform competition in two-sided markets." *Journal of the european economic association* 1 (4)**,** 990-1029.

Rochet, J. C. and J. Tirole (2006). "Two-sided markets: a progress report." *The RAND journal of economics* 37 (3)**,** 645-667.

Schilling, M. A. (2002). "Technology Success and Failure in Winner-Take-All Markets: The Impact of Learning Orientation, Timing, and Network Externalities." *Academy of Management Journal* 45 (2)**,** 387-398.

Schneider, C. Q. and C. Wagemann (2010). "Standards of Good Practice in Qualitative Comparative Analysis (QCA) and Fuzzy-Sets." *Comparative Sociology* 9 (3)**,** 397-418.

Schreieck, M., M. Wiesche and H. Krcmar. "The Platform Owner's Challenge to Capture Value – Insights from a Business-to-Business IT Platform." 38th International Conference on Information Systems (ICIS). 2017 Seoul, Korea.

Täuscher, K. and S. M. Laudien (2018). "Understanding platform business models: A mixed methods study of marketplaces." *European Management Journal* 36 (3)**,** 319-329.

Teece, D. J. (2010). "Business Models, Business Strategy and Innovation." *Long Range Planning* 43 (2-3)**,** 172-194.

Teece, D. J. and G. Linden (2017). "Business models, value capture, and the digital enterprise." *Journal of Organization Design* 6 (1)**,** 1-14.

Tidhar, R. and K. M. Eisenhardt (2020). "Get rich or die trying horizontal ellipsis finding revenue model fit using machine learning and multiple cases." *Strategic Management Journal* 41 (7)**,** 1245-1273.

Tiwana, A. (2014). *Platform Ecosystems: Aligning Architecture, Governance, and Strategy.* Waltham, MA: Elsevier.

Van Alstyne, M. W., G. G. Parker and S. P. Choudary (2016). "Pipelines, platforms, and the new rules of strategy." *Harvard business review* 94 (4)**,** 54-62.

Webster, J. and R. Watson (2002). "Analyzing the Past to Prepare for the Future: Writing a Literature Review." *MIS Quarterly* 26 (2)**,** xiii-xxiii.

Weking, J., T. Böttcher, S. Hermes and A. Hein. (2019). "Does Business Model Matter for Startup Success? A Quantitative Analysis." 27. European Conference on Information Systems (ECIS). 2019 Stockholm, Sweden.

Weyl, E. G. (2010). "A Price Theory of Multi-Sided Platforms." *American Economic Review* 100 (4)**,** 1642-1672.

Zhao, Y., S. von Delft, A. Morgan-Thomas and T. Buck (2020). "The evolution of platform business models: Exploring competitive battles in the world of platforms." *Long Range Planning* 53 (4)**,** 101892.

Zhou, Z., L. Zhang and M. W. V. Alstyne. "How Users Drive Value: Platform Investments that Matter." 2020.

Zott, C. and R. Amit (2008). "The fit between product market strategy and business model: implications for firm performance." *Strategic Management Journal* 29 (1)**,** 1-26.

Zott, C. and R. Amit (2010). "Business Model Design: An Activity System Perspective." *Long Range Planning* 43 (2-3)**,** 216-226.