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# **CUSTOMER COMPLEMENTARITY IN THE DIGITAL SPACE: EXPLORING AMAZON'S BUSINESS MODEL DIVERSIFICATION**

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## **ABSTRACT**

In spite of the striking evidence that many firms run multiple business models, scholars and practitioners still lack a comprehensive understanding about business model portfolio dynamics, particularly when this happens in the digital space. Prior research on business model diversification tends to focus on supply-side complementarities, such as a firm's synergies among resources and capabilities. Yet, the demand-side with its customer complementarities remains theoretically and empirically underexplored, despite offering interesting opportunities for firms' competitive advantage. By developing a qualitative, longitudinal (1995 – 2018) analysis of the various business models developed by Amazon.com, we identify and map how customer complementarities—network effects and one-stop shop effects—can support firm growth and competitive advantage, particularly in the digital space. We identify what we term the 'integrative business model,' defined as the business model in a portfolio exhibiting the most (predominantly positive) customer complementarities with other business models. We propose mechanisms for the integrative business model to contribute to sustainable competitive advantage via a causal loop diagram and discuss implications for theory and practice.

*Keywords: Customer Complementarities, Digital, Business Model, Diversification, Integrative Business Model, Amazon.*

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## INTRODUCTION

Whatever activities a firm undertakes, whatever product markets it serves, whatever stakeholders it interacts with, it ultimately exists to generate and capture *value* (Amit & Zott, 2001; Baden-Fuller & Morgan, 2010; Priem, 2007; Priem & Swink, 2012). Efficient and effective mechanisms of value creation and capture traditionally correspond to a sustainable growth of the firm, and scholars have long investigated which strategies allow organizations to embark in such development (Evans, 1987; Penrose, 1959; Teece, 2010). In recent years, the rise of the digital economy has provided burgeoning evidence on how companies like Google, Facebook, Uber, Apple, Spotify, Airbnb, eBay, and Netflix have flourished—often against major incumbents—and scaled-up by leveraging, among other factors, effective and complex relationships with the customer (Baden-Fuller & Haefliger, 2013; Khanagha et al., 2014). Accordingly, scholars have started to focus on how firms engage consumers and other actors (Baden-Fuller & Haefliger, 2013; Chesbrough & Rosenbloom, 2002; Khanagha et al., 2017; Teece, 2010).<sup>1</sup> More recently, the literature on business models has progressively shifted the focus of attention from traditional mechanisms of value creation and value capture within the boundary of the firm (i.e., the “supply-side”), to other complementary mechanisms which span across firm boundaries. Scholars have started to study the interaction with customers as key to firm value creation and related monetization—defined as “demand-side” perspective (Priem, 2007; Ye et al., 2012).

Recognizing the centrality of customer interaction in the digital space promises to overcome some of the traditional limitations related to off-line business (Amit & Zott, 2001; Sawhney et al., 2005)—e.g., limits to scalability, accessibility, and consumption tracking—while further presents other key challenges related to (big) data management (George et al., 2014) and acceleration in the competitive dynamics (Lee et al., 2010).

Increasing scholarly attention has been devoted to the opportunities derived from interacting with customers in different ways, even when this implies mobilizing the same product or service (Markides & Charitou, 2004). Coined by scholars as “business model diversification” (Ahuja & Novelli, 2016a; Aversa et al., 2017; Björkdahl, 2009; Sohl et al., 2019), this research stream relates to increasingly

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<sup>1</sup> In recent years, such investigations encompass a broader and heterogeneous competitive space, often identified as “ecosystem” (Adner & Kapoor, 2010; Ansari et al., 2016; Hannah & Eisenhardt, 2018; Jacobides et al., 2018; Kapoor & Lee, 2013).

popular concepts such “hybrid business models” (e.g., Bonaccorsi et al., 2006; Velu & Stiles, 2013), “tandem business model” (Casadesus-Masanell & Tarzijan, 2012), “dual business model” (e.g., Markides & Charitou, 2004; Markides, 2013), “business model portfolios” (e.g., Sabatier et al., 2010; Snihur & Tarzijan, 2018), “business model configurations” (e.g., Aversa et al., 2015a).

Take, as an iconic example, Netflix: in leveraging an online platform, the digital new-entrant mobilized two different customer interaction mechanisms (i.e., online video streaming and more traditional ‘DVD-by-mail’ rental) and ultimately defeated major incumbents in the video rental market (e.g., Blockbuster).<sup>2</sup> While this particular dual business model proved successful for a period of time, scholars and practitioners alike fall short in extending a generalizable rationale for digitally-driven businesses which deploy multiple business models (i.e., both online and offline; across multiple industries and product categories; and encompassing different monetization mechanisms). Ergo, we ask: *what are the demand-side mechanisms enabling customer interaction and firm competitive advantage in digitally-driven business model diversification?*

This study echoes former works (Sohl et al., 2019; Ye et al., 2012) in affirming that diversifying a firm’s offering via different mechanisms of customer interaction—in other words, with a “portfolio of business models” (Sabatier et al., 2010)—represents a distinct and viable strategy. Our endeavor also responds to recent calls for adopting a demand-side perspective which, if combined with a business model lens (see Priem et al., 2018), promises to enhance our understanding of a domain that is paramount to firm competitive advantage, yet has been underexplored by strategy research (Rietveld, 2018; Sohl et al., 2019). Further, we identify and empirically assess mechanisms of “customer complementarity” as relevant drivers of firm performance, which point to the leveraging of synergies across customer groups *within* and *between* business models (Ye et al., 2012). We carefully unpack the underlying mechanisms of such customer complementarity and contrast them within and across business models in the portfolio over time.

Empirically, we address this question with a qualitative longitudinal analysis of what is possibly one of the most iconic and complex digitally-born firm of the last century: Amazon (Ritala et al., 2014). We leverage a 23-year (1995-2018) longitudinal archival database, containing granular

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<sup>2</sup> For more details on the Netflix case see Ahuja and Novelli (2016a); Aversa et al. (2019); Teece (2010).

information on the development of Amazon's business model portfolio to provide valuable insights on the demand-side mechanisms of customer complementarity via business model diversification. Our study supports the systematic, "downstream" (Priem, 2007) appraisal of business model portfolios in terms of demand-side synergies, but also spells out certain substitution effects which might have (in part) undermined the firm's performance.

Our contribution caters to both scholars and practitioners: for the former, we empirically analyze customer complementarities in order to identify what we refer to as "integrative business models"—a specific type of business model which—by exhibiting the most (predominantly positive) customer complementarities with other business models—supports the development of a firm's business model portfolio. The qualitative analysis generates a theoretical and thus generalizable contribution that is depicted and summarized in a causal-loop diagram (as per Casadesus-Masanell & Ricart, 2010; Casadesus-Masanell & Ricart, 2011). For practitioners, we present the mapping of customer complementarities as a powerful tool for business model diversification that complements existing supply-side frameworks (e.g., Aversa et al., 2017; Casadesus-Masanell & Tarzijan, 2012). We proceed with an introduction to the literature on business model diversification before presenting the Amazon case in detail. We discuss results, formulate research contributions, and finally review implications and limitations.

## **THEORETICAL BACKGROUND**

### **Business model: supply-side and demand-side perspectives**

In the past decade the business landscape has been transformed by the disruptive emergence of digital new entrants across a diverse range of industries—such as Netflix, Amazon, Spotify, among others (Aversa et al., 2019; Baden-Fuller & Haefliger, 2013; Khanagha et al., 2017; Teece, 2010)—thus bringing attention to the use of innovative 'business models' as forming a new basis for competitive advantage (Amit & Zott, 2001; Baden-Fuller & Morgan, 2010; Chesbrough, 2010; Cozzolino et al., 2018; Markides & Oyon, 2010; Teece, 2010). By the same token, the diffusion of virtual markets instigated by the advent of the digital economy has fundamentally altered value-chain configurations and traditional logics of value creation (Amit & Zott, 2001), thus sparking

considerable interest in management research (Foss & Saebi, 2017; Klang et al., 2014; Massa et al., 2017; Zott et al., 2011).<sup>3</sup>

The resource-based view of the firm (Barney, 1991; Wernerfelt, 1984) has fundamentally focused on enhancing value for the firm in and of itself, thus ultimately aiming at optimizing value creation and value capture (Priem, 2007; Priem et al., 2018). In doing so, academics and practitioners alike “have focused on internal resource bundles (Sirmon et al., 2011) rather than consumer bundling preferences on the basis for firm strategies” (Ye et al., 2012: 207)—what is known as *supply-side perspective* (Priem, 2007; Priem et al., 2018). This in turn has brought most of the literature to neglect the essential, yet indispensable role of consumers in arbitrating and validating the value offered by the firm (Adner & Kapoor, 2010; Priem, 2007). The growth and ubiquity of digital technologies (George et al., 2014), combined with the renewed interest in value arising from the customer—or *demand-side perspective* (Priem, 2007; Priem et al., 2018)—has recently motivated scholars to expand the scope of customer-centered organizational activities, via the theorization of business models in strategy.

A business model is a simplified representation of a business’s value creation and value capture activities which focuses on the interaction with the customer (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Morgan, 2010).<sup>4</sup> Its model-specific properties allow it to be cognitively designed, communicated, and modified (Aversa et al., 2015b; Bojovic et al., 2018; Furnari, 2015; Martins et al., 2015). A business model unifies the interactions between customers, entrepreneurs, and markets under a single umbrella, one that is inextricably linked to competitive advantage and performance (Casadesus-Masanell & Ricart, 2010; Teece, 2010; Zott & Amit, 2008), in turn contributing to the general acknowledgement of the business model as a distinct unit of analysis (Casadesus-Masanell & Ricart, 2010; Zott et al., 2011: 1020). The renewed focus on customer interaction provided by this perspective (Priem et al., 2018) thus unveils emerging dynamics in traditional and digital domains, particularly in contexts wherein the demand is heterogeneous (Rietveld & Eggers, 2018).

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<sup>3</sup> For instance, the proliferation of ‘multi-sided’ business models (Baden-Fuller & Mangematin, 2013; Rietveld et al., 2019; Rochet & Tirole, 2006)—i.e., those connecting two or more groups of users such as Uber or Airbnb—and their redeployment of under-used ordinary resources, has defied many traditional strategic approaches to competitive positioning through the utilization of unique resources and capabilities (Teece, 2010, 2018).

<sup>4</sup> Although the literature on business model does not provide a univocal definition of “customer engagement” most studies seem to point to an interaction between seller and consumers where the mutual and active participation provides additional value to both parties.

Such reflections bring us to our second point: customer interaction reveals that customers are often heterogeneous in their relation to value creation and capture (Baden-Fuller & Mangematin, 2015; Rietveld & Eggers, 2018; Rumble & Mangematin, 2015).<sup>5</sup> Thus, effectively exploring the dynamics within business models first requires a clear understanding as to how, particularly in multi-sided business models, different customer groups interact, and what kind of advantages they (aim to) obtain from such interactions (Rietveld, 2018; Ye et al., 2012). Simply put, some customer groups may pay for a product or service, others may get rewarded or paid to interact, and others may receive goods and services for free. Yet, by our definition, all sets of customers must be catered for a transaction to fruitfully occur—and failing to successfully interact with each customer group might make undermine the effectiveness of the business model. For instance, Google could not finance its search engine without satisfying advertisement clients, and concurrently advertisers would dwindle without users adopting Google search engine.

### **Business model portfolios and demand-side complementarities**

When investigating business models, scholars and practitioners need adopt a “holistic” perspective that looks at organizational activities in terms of their inter-relatedness as a *system* (Zott & Amit, 2010)—thus placing special emphasis on a firm’s “global optimum” (Markides, 2015: 143). Yet, to study a business model portfolio’s global optimum it is key to assess the delicate and complex *inter-relatedness* of the various business models encompassed within a *system*—i.e., a firm’s business model portfolio (Casadesus-Masanell & Tarzijan, 2012; Markides & Charitou, 2004; Sabatier et al., 2010; Snihur & Tarzijan, 2018).

In fact, in spite of the growing evidence that organizations do engage with multiple business models at the same time (Aversa et al., 2017; Casadesus-Masanell & Tarzijan, 2012; Markides & Charitou, 2004; Markides & Oyon, 2010; Sabatier et al., 2010; Sohl & Vroom, 2017; Sohl et al., 2019), there remains a dearth of comprehension about the complementary dynamics of business model portfolios, thus leading to an incomplete understanding of the strategic value of business model diversification.<sup>6</sup> In order to successfully interact with customers—in light of the evident complexity

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<sup>5</sup> In this work we define as ‘customer group’ a group of (potentially disconnected and uncoordinated) customers which share similar consumption needs or habits.

<sup>6</sup> Business model diversification is often mistaken by or conflated with product diversification. The former can allow the same product being ‘sold’ through multiple value chain mechanisms (e.g., think of a pay per view of



of a diversified business model portfolio (Snihur & Tarzijan, 2018)—we set out to explore not only the dynamics between different customer groups *within* the same business model, but also *between* the different business models enacted by the firm as part of a diversification strategy (Ahuja & Novelli, 2016b).

A comprehensive approach to the study of business model portfolios requires to empirically observe and theorize about two types of complementarities: besides traditional *supply-side* mechanisms of resource and capability complementarity<sup>7</sup>—which have been extensively explored in several works (see among others Aversa et al., 2015a; Kim & Min, 2015; Markides & Charitou, 2004; Sabatier et al., 2010; Velu & Stiles, 2013)—we need to investigate the novel and underexplored *demand-side* mechanisms of customer complementarity (for an noteworthy study that empirically investigates demand-side complementarities in business model diversification, see Sohl et al., 2019).<sup>8</sup> We echo recent works in claiming that “consumer-based synergies can create value independently from producer-based synergies, even when a firm has no otherwise superior assets” (Ye et al., 2012: 208). Thus, evaluating the strategic relevance of such complementarities calls for careful empirical examination in uncovering their clear link to the business model behind the customer interaction.

We leverage recent contributions (Ye et al., 2012) to define the two possible sources of increasing returns of joint consumption: (*within-customer group*) *one-stop shop effects* (OE) and (*between-customer group*) *network effects* (NE). The benefits of a one-stop shop effects have been well established in the marketing literature, wherein the archetypical OE is a brick-and-mortar shopping mall covering all retail needs (Kaufman et al., 1996). In the physical world, OE effects point to basic efficiencies for the customer, such as reduced transaction and communication costs. Network effects are equally well documented in economics (Economides, 1996; Economides & Katsamakas, 2006; Milgrom & Roberts, 1990) as benefits accruing to users increasing with the number of other users present, such as telephones or directories. In a context of multiple customer groups, Rochet and

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subscription model for movie rental). Although in many cases a new product can maximize its commercial potential through a new business model, the two elements are theoretically distinct (Aversa et al., 2017).

<sup>7</sup> These are also defined as the “producers’ synergies” (Ye et al., 2012),

<sup>8</sup> Theoretically, recent work has characterized complementarities in consumption as “generic,” “unique,” or “supermodular” (Jacobides et al., 2018). Only what scholars call supermodular complementarities can yield increasing returns of joint consumption, yet it is not clear if the latter are generated by network effects or by synergies in the behavior of the individual consumer, or both.

Tirole (2006) have put forth the effects of what they call “multi-sided markets” to explain pricing choices across the customer groups and their effects on growth.<sup>9</sup> In these cases, the existence of substitution effects can also cannibalize the value created between the two groups, in turn generating negative NE—e.g., excessive advertising can hinder viewers’ willingness to consume video or music. We carefully explore our case via these effects as starting points while bearing in mind that, theoretically, complementarities affect many areas of consumption depending on industry dynamics, innovation, and competition (Teece, 2018).

## **METHOD**

This study is based on a longitudinal, qualitative analysis which compares the various business models adopted by Amazon during the period between its inception in 1995, and 2018—it is thus longitudinal in nature and mostly based on archival sources. Scholars agree that qualitative studies—even when focusing on a single remarkable company (as per Siggelkow, 2007)—can “capture the complexity of a case, including relevant changes over time, and attend fully to contextual conditions” (Yin, 2008: 220). Therefore, they are suitable to generate robust theoretical foundations (Eisenhardt, 1989; Eisenhardt & Graebner, 2007).

### **Research setting**

Examining how competitive advantage coalesces from the deployment of different customer interaction mechanisms (Nucciarelli et al., 2017) contributes to the comprehension of strategic business model diversification. Zott and colleagues pinpoint the impetus in business model research as coinciding with “the advent of the Internet in the mid-1990s and has been gathering momentum since then” (Zott et al., 2011: 1022). Today regarded as a pioneer of the digital economy and epitome of the e-business revolution, Amazon originally began as an online bookstore in 1995; by 2017, it accounted for over 310 million active customers worldwide and reported over \$177 billion in net sales (Source: Amazon, 2018). Thus, specifically examining the emergence of Amazon’s “iconic business model” (Mikhalkina & Cabantous, 2015)—and its growth history and future growth prospects—naturally aligns with this study’s objective, as the firm’s inception (i.e., 1995) also perfectly coincides with the aforementioned momentum in business model research. What is more, its early IPO enabled

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<sup>9</sup> The network effects conflate with what Jacobides and colleagues (2018) recently termed “complementarities in consumption.”

full access to information pertaining to its growth and performance, which enabled the assessment of the financial viability of Amazon's business model configurations. Its significant scope and growth also continuously attract scholars' and the media's attention, thus facilitating access to archival data.

In addition, over the course of its existence, Amazon has fundamentally altered the structure of its core online retail activities: it began with a "sell all, carry few" arrangement, and as it grew, morphed into "sell all, carry more" (Girotra & Netessine, 2013). Similarly, it expanded its online retail business to become an online "marketplace" where multiple retailers sell their products—thus making the "leap" from a "dyadic" business model to a "multi-sided" one (Baden-Fuller & Mangematin, 2013)—thereafter operating a single business model to serve two customer groups—and leveraging *big data* in doing so. Thus, our inquiry can offer insights regarding the relation between the firm's growth and its increasing ability to track and leverage customer information to better develop its business model portfolio.

Last but not least, Amazon is of particular relevance to the investigation of *business models portfolios* as it not only offers online retail through its renowned Marketplace, but has also diversified into additional offerings (i.e., computing, fulfilment, and shipping services, amongst others). At the surface, some of these businesses may appear seemingly unrelated. However, by connecting the firm's different business models and by examining their inter-relationships yields non-trivial insights on key complementarities that would otherwise remain unnoticed.

### **Data collection**

This study's data collection followed a multi-step process to construct a 23-year (1995-2018) longitudinal archival database, containing information on the development of Amazon's business models—with a focus on different customer groups involved in both dyadic and multi-sided businesses—financial performance, physical assets, and growth. Secondary historical data gathering was based on a broad range of publicly available and reliable sources, encompassing archival records, specialized and generalist press, academic publications, industry reports, company documents, financial statements, websites, press releases, and newswires. We decided to constitute our database with inputs from reliable secondary sources such as general press (e.g., Financial Times, New York Times, The Economist), practitioners' publications (e.g., Harvard Business Review, MIT Technology Review), retrospective analyses from industry reports, market analyses and case studies (e.g., Mintel,

Euromonitor Passport), and technical press (e.g., NET, Wired)—also relating the major technological and competitive changes that were congruent with Amazon’s major operations changes—until reaching the point of theoretical saturation (Eisenhardt, 1989).

The first phase of data collection method included gathering all of Amazon’s annual reports, which were publicly available on Amazon’s Investor Relations website, for the years 1997 and onwards (published in 1998 and onwards, accounting for a total of 20 annual reports). This enabled us to construct an essential timeline (see Table 1)<sup>10</sup> of Amazon’s “major events” (i.e., in 2000, Amazon launched the “Amazon Marketplace”; in 2005, Amazon launched the “Amazon Prime” membership program in the U.S.), which provided the baselines for the identification of business models, business model changes, and growth strategies.

[Insert Table 1 about here]

This also allowed us to outline Amazon’s financial progression, and thus to associate it with the latter major events, by gathering data relating to changes in turnover and profitability (i.e., 2001, a year after the Amazon Marketplace launch, the company reported a 13% growth in sales). For the years preceding 1997 (i.e., 1995 and 1996), we relied on the 1997 Amazon IPO prospectus, which was publicly available on the NASDAQ website. Given our research’s focus on the Amazon business model portfolio, we further fine-tuned our initial “major events timeline” to exclude those that did not fuel Amazon’s organic growth (i.e., filtering events such as takeovers, mergers, and acquisitions). Further we undertook a second round of data collection pertaining to the specificities of the different changes and related customer group interaction. This served as a stepping-stone for a demand-side assessment based on the identification of the customer complementarities within the portfolio.

Table 2 provides a detailed account of the data sources—pointing to a final sample of 244 key documents for a total of 2,662 pages, used for both data analysis and triangulation.

[Insert Table 2 about here]

## **Data analysis**

Our study’s data collection and analysis overlapped substantially. To deal with the vast amounts of collected evidence, we performed a within-case analysis (Eisenhardt, 1989), so as to effectively

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<sup>10</sup> The Appendix presents an extended version of the timeline.

combine, organize, and examine our qualitative and quantitative data inputs (Yin, 2008). The coding was conducted by four scholars, three dedicated to main coding and one dedicated to playing the “devil’s advocate” in challenging the others’ interpretations (Locke, 2001). Building on common conceptualization of business model elements (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013)—namely “customer sensing,” “customer engagement,” “value-chain linkages,” and “monetization mechanisms”<sup>11</sup>—we started coding the aforementioned Amazon timeline of secondary data into the latter four categories, enabling us to group the major events into distinctive business models and/or changes associated with one of the four dimensions of these business models—ultimately circumscribing Amazon’s current business model portfolio. In the 23 years of analysis, we identified 6 different configurations of Amazon’s business model portfolio involving up to 9 different customer groups.<sup>12</sup>

As this study fundamentally sought to explore the singular dynamics of customer interaction discretely harnessed by business models, we adopted a demand-side perspective (Ye et al., 2012) in embarking upon the second phase of our data analysis. Indeed, looking at “strategically relevant characteristics of demand [to explore] innovation strategies” (Priem et al., 2018: 27), we built on the economics literature (Economides, 1996; Economides & Katsamakas, 2006; Milgrom & Roberts, 1990) and the well-established marketing literature (Kaufman & Lane, 1996; Messinger & Narasimhan, 1997) to distinguish and put forth two types of complementarities which hold the potential to increase returns of joint consumption: ‘one-stop shop effects’ (OE) and ‘network effects’ (NE).<sup>13</sup> Thus, once Amazon’s business models and customer groups were identified, we coded customer complementarities by mapping OE and NE between customer groups within and across

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<sup>11</sup> In line with the authors, ‘customer sensing’ delineates the catered customer groups and their needs—and thus whether the business model leverages dyadic vs. multiparty relations—while ‘customer engagement’ outlines the value proposition for each customer group—grounded upon the distinction between ‘taxi’ (i.e., custom-made) vs. ‘bus’ (i.e., scale-made) based systems. The ‘value-chain linkages’ dimension sketches the processes used by the firm to deliver its product/service to a customer, as well as the required relationships with other stakeholders to do so. Finally, the ‘monetization’ element describes the value capture mechanisms employed by the firm—encompassing pricing, timing of payments and methods for collecting the latter, as well as complementary assets providers.

<sup>12</sup> We report the most recent configuration in the main manuscript and the other 5 in the Appendix.

<sup>13</sup> A ‘one-stop shop’ effect may occur when customer groups overlap, in turn creating advantages or disadvantages (i.e., synergies or substitution effects) for the customer belonging to two groups. When customer groups do not overlap—whether it be within the sides of the same business model or across multiple business models—we observe ‘customer network effects’ if the increased or decreased presence (i.e., positive or negative effects) of one customer group increases or decreases the utility experienced by the other group.

business models, as per Ye et al. (2012). To reduce bias, we triangulated our preliminary interpretations with inputs from credible secondary sources (i.e., case studies, academic publications, and archival quotes) and discarded the interpretations where the coders did not reach consensus.

Further, we opted for the use of a causal loop diagram to depict the contributions of strategic business model diversification—in terms of competitive advantage via customer complementarities—in an abstract and generalizable form, following the methodology proposed by Casadesus-Masanell and Ricart (2011). Originally featured in *Long Range Planning* (Casadesus-Masanell & Ricart, 2010), this tool has emerged as the cornerstone of several theoretically-relevant contributions related to business model research (e.g., Aversa et al., 2019). Finally, we move from this representation to discuss the role of the “integrative business model” emerging from our analysis, and we compared its features to those of a “standard” business model.

### **Appendix and additional materials**

In addition, we developed a comprehensive Appendix which includes complementary evidence to further support and substantiate the arguments put forth in this study. Given the inherent nature of our research, we integrated a longitudinal account of all 6 business model changes. We also extracted aggregated financial measures from publicly available documents, in an attempt to explore Amazon’s overall performance in terms of growth and profitability. Although our goal is not to develop a study of causality or performance variance, such an exercise allowed us to qualitatively associate Amazon’s progressive business model portfolio development to the achievement of intertwined customer complementarities, and ultimately assess the general firm’s (overall positive) performance trend across time.

Finally, building on prior study’s research protocols for business models (Aversa et al., 2015a; Aversa et al., 2017), we longitudinally (1995-2018) examined variations of Amazon’s portfolio of business models in terms of their relation to the firm’s resources, capabilities and performance, and mapped them across the 6 portfolio configuration. Where such analysis is extensive and only partially related to the scope of this paper, it is available from the authors upon request.

## RESULTS

Since November 2015, Amazon deployed 6 business models which connect a total of 9 customer groups. Table 3 presents an overview of Amazon's current business model portfolio in line with common frameworks (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013).

[Insert Table 3 about here]

Four of these business models link together different groups of customers (i.e., multi-sided business models), while two engage with a single group of customers (i.e., dyadic business models). Customer groups in multi-sided business models experience complementarities within each business model. Furthermore, some customer groups across different business models also enjoy (indirect) complementarities. We first articulate the complementarities within and across business models, then point to the central finding of the integrative business model, before discussing these results in light of business model portfolios and digitization. Figure 1a presents the association between the business models (boxes on the left side) and customer groups interacting with each business model (boxes on the right side), while Figure 1b presents a map of customer complementarities (i.e., OE and NE) across customer groups. In Figure 1b, customer groups are listed in the box at the center of the figures, while the C-shaped links highlight the connections between business models, with OE on the left side and NE on the right side. Solid lines indicate positive effects (i.e., synergies), while dotted lines indicate negative effects (i.e., substitutions).

[Insert Figure 1a and Figure 1b about here]

### Complementarities within business models

Within the same multi-sided business model, there may be positive or negative NE between customer groups, i.e., the increase/decrease of one type of customer increases/decreases another customers group, and vice versa. Sometimes customer groups can overlap: this means that the same group of customers simultaneously correspond to two different business models. When we observe such an overlap, we find that customer groups may experience OE which can either generate synergies (positive effects) or substitutions (negative effects).

The first business model (BM1) 'Amazon Marketplace' connects online shop suppliers—encompassing both Amazon as a vendor, third-party sellers, and online shop customers—that is, anyone interested in buying products and services online. The two latter groups enjoy positive

network effects (NE1). Indeed, users will have a superior incentive in using the platform as the number of retailers and products or services offered increases and, concurrently, an increase in buyer listings makes the website more attractive to sellers. Thus, the growth in the number of online shop suppliers leads to an increase in the number of Marketplace customers, and vice versa.

The ‘Amazon Prime’ business model (BM4) connects three different customer groups: (1) online shop customers (who purchase items on the Amazon Marketplace); (2) Prime content creators (movie majors, records companies, and others); (3) Prime customers (i.e., customers interested in Prime Video and additional benefits bundled within the Prime subscription). These customer groups relate to each other through positive network effects. Indeed, if the number of Prime content creators increases, both the number of online shop customers (of the Amazon Marketplace) and Prime customers increase, and vice versa (NE2, NE3). For example, as the number of Prime movie suppliers increases, so does the number of Prime subscriptions as customers will be more willing to pay the annual subscription fee, insofar as it offers access to a broad collection of multimedia content, free fast shipping, and other additional services. This further materializes into positive NE for Amazon Marketplace customers: in considering the advantages reaped via the Prime business model, online shop customers will consume more of the products and services available in the Marketplace (creating a sort of lock-in effect). Conversely, increases in the number of both Marketplace and Prime customers will enhance Prime content creators’ perceived advantages of distributing their content online. By attracting more buyers or customers (both Prime and Marketplace customers) which in turn attracts more content creators, Amazon Prime enhances the website visibility and represents an incentive to the use of the Amazon Marketplace.

The multi-sided business model (BM5) ‘Mechanical Turk’ links together two customer groups, namely the suppliers of the human workforce on one side, and customers on the other. These two groups enjoy positive network effects (NE4), as workforce customers will have a superior incentive in using the Amazon platform if the amount and type of workforce suppliers increase. A large demand within the Mechanical Turk business model generates positive network effects by increasing the suppliers’ offer.



To offer a more comprehensive view of customer complementarities, we have also included in our analysis the combined effect of the latest—yet more traditional—Amazon bricks-and-mortar retail business: (BM6) ‘Amazon Physical Stores,’ which connects Physical Shop suppliers and customers (typically loyal Amazon Marketplace and Prime customers). Similar to that of ‘Amazon Marketplace,’ we observe evident positive network effects (NE9) among customer groups belonging to ‘Amazon Physical Stores,’ since the number of suppliers in the physical stores increases as the number of physical customers increase, and vice-versa; yet, given the space limitation Amazon is aimed to efficiently focus on the few retailers/products and items, which are most sold in the Amazon Marketplace within a specific geographic area.

Within Amazon’s business model portfolio, we did not identify any clear OE effects for different customer groups connected by the same business model. However, we found such advantages when considering relations between customer groups across different business models.

### **Complementarities between business models**

Across different business models, there may be positive or negative externalities amongst their different customer groups. To appraise the relations between customers groups belonging to different business models, we start by examining OE—i.e., we explore if a specific customer group experiences positive or negative externalities when it is interacting with more than one business model.

As mentioned before, we found strong positive NE amongst the customer groups within the Prime business model. We now also highlight the advantages of being part of both Prime and online shop (Marketplace) customer groups, insofar as Prime memberships serve to entice Amazon Marketplace expenditure (OE1). This represents a positive one-stop shop effect given that, on one hand, Prime customers have access to a broad selection of products and services (including unlimited free shipping, streaming) and, on the other hand, frequent purchasers of the Amazon Marketplace can also reap shipping benefits reserved to Prime customers.

In understanding NE arising between customer groups of different business models, we also consider how, as the Prime content offering enlarges, Marketplace customers are more attracted to subscribe to Prime. Thus, where Prime customers have superior incentives in purchasing from the Marketplace, this, in turn, incentivizes third-party sellers to list their products on the Amazon Marketplace, and vice versa (as previously put forth). Consequently, an increase in Prime

subscriptions also increases the number of suppliers selling on the Marketplace (NE5). Furthermore, Figure 1b shows both a network effect (NE6) and one-stop shop effect (OE2) between Prime content creators and online shop suppliers, since the latter can capture value by selling, or retailing, their products via the Amazon Marketplace, and vice versa. For example, movie majors supplying films to Prime (streaming service) may experience additional complementarities in selling their DVDs and Blu-rays via online retail (Marketplace). Nevertheless, if there is too much overlap, negative OE may arise insofar as cannibalization may occur: for instance, if customers start to rent movies via Prime rather than purchasing them from the Marketplace. Still, we note that, it is precisely the promise of cannibalization (of a range of Marketplace products) that draws online shop customers to turn to Prime, with Prime members thereafter enjoying additional services which, in turn, encourage consumption on the Amazon Marketplace. Therefore, the positive synergies generated by the OE effect are still greater than the negative ones.

Moreover, Prime Video leverages Amazon Web Services Cloud as the underlying technology for its streaming service and back-end infrastructure—as does its direct competitor, Netflix. On that basis, Prime content creators are also simultaneous customers of the ‘Amazon Web Services’ business model (BM4) and generate positive one-stop shop effects (OE3). Content creators can use the different servers provided by Amazon Web Services to run micro-services, store movies, and handle internet traffic. Consequently, they will find additional advantages in distributing their multimedia content via Amazon Prime if they can benefit from the renowned web and data infrastructure—which Amazon had initially developed for itself—and cloud computing services—which are now offered to external businesses. Amazon Web Services can also leverage its existing service offering to cater to the more singular needs of Prime content creators via a ‘pay what you use’ monetization system.

What is more, Amazon Web Services also support Marketplace suppliers to programmatically exchange data on listings, orders, payments, by ensuring a high degree of sales automation, which in turn help suppliers to grow their business. Thus, we also find positive one-stop shop effects (OE4) for those Marketplace suppliers who are also Web Services customers. Conversely, Web Services customers can also benefit from being a supplier in the Amazon Marketplace, as they gain the

opportunity to reach a broader set of customers by harnessing the power of the platform's reputation and scope.

A positive OE effect may occur also between Mechanical Turk suppliers and both Marketplace (OE5) and Prime (OE6) customers. Indeed, if the expected compensation for Mechanical Turk workforce can be spent on Marketplace and Prime—through coupons or gift cards, then the Mechanical Turk supplier will likely be, or become, an online shop customer, and possibly a Prime customer. Conversely, a regular Marketplace customer, and Prime member (necessary but not sufficient condition) could decide to earn Amazon gift cards by working as a Mechanical Turk supplier. This approach harnesses the power of the web to grow the Amazon business, initiate networking, and incentivize purchases on both the Amazon Marketplace and Prime. Within Amazon's business model portfolio, we observe no clear negative NE for customer groups belonging to different business models. This means that as one group of customers increases, there is no decrease in the number of any other customer groups.

Last but not least, both NE and OE can exist between Amazon Physical Stores, Marketplace, and Prime customers. Amazon's brick-and-mortar spaces are designed to augment the shopping experience by supplementing the company's virtual presence with physical touchpoints. Indeed, Physical Shop customers require a Prime account to buy books in-store at cheaper prices (NE7 and OE7). As there are no price tags, customers have to scan a book's cover by using the Amazon mobile application, which subsequently displays both the regular price and Prime member price. In doing so, Amazon collects customer data which are later utilized to target back these customers with relevant content, in turn improving future shopping experiences across both the online and physical spaces.

Amazon's physical businesses solve one of the biggest issues of online shopping: discoverability. The solution is not derived by stocking an infinite number of books, but rather by establishing data-driven routines that increase the likelihood of customers finding the book that fits their taste. By purchasing in a physical store, and later accessing Marketplace, customers will enjoy curated product recommendations based on previous in-store purchases, and vice-versa (NE8 and OE8). Consequently, Amazon Physical Stores suppliers may experience complementarities in offering their

products simultaneously, as for retailers within the Amazon bookstore, the same applies to third-party sellers in the Marketplace (OSS9), and as a content provider in Prime (OE10), and vice-versa.

Moreover, where Mechanical Turk suppliers can spend their compensation on both Marketplace and Prime, a positive one-stop-shop effect may occur when Mechanical Turk suppliers use their vouchers to purchase in a Physical Store, rather than buying online (OE11). Overall, Amazon Physical Stores are fundamentally designed to prompt shoppers to subscribe to Prime, and in turn to purchase seamlessly and interchangeably from Marketplace and Physical Stores.

Finally, where two customers group do not overlap, we find that both positive and negative effects may arise. Indeed, such contexts can instigate substitution effects, insofar as one customer group's products cannibalizes that of another business model. Take, for example, Samsung, or Apple, selling their range of tablets on the platform—which naturally cannibalizes Amazon's e-reader Kindle sales. A positive effect may equally occur when, for instance, Google buys server space from Amazon Web Services, and in doing so improves the indexing and visibility of its core search engine, which ultimately enhances the customer journey to the Amazon Marketplace.

### **Amazon Prime as an integrative business model**

In observing the final set-up of Amazon's business model portfolio in Figure 1b, Amazon Prime emerges as the business model where, in comparison to others, customer groups benefit from the greatest number of OE and NE complementarities. Prime content creators enjoy OE when they are also simultaneously Web Services customers and online shop suppliers, and can also share NE with online shop suppliers, online shop customers, and (of course) Prime customers. While Prime customers also benefit from OE when they are also Physical Shop customers, Mechanical Turk workforce suppliers, and online shop customers, they can also share NE with Physical Shop customers, online shop customers, and the same for Prime content creators. We thus tentatively define as *integrative business model* the business model in a portfolio exhibiting the most (predominantly positive) customer complementarities.

Evidence from the entire history of Amazon (for a detailed timeline see the Appendix or Yurieff, 2018) points to the Prime business model as the center of a diversification strategy aimed at increasing Amazon's unique competitive advantage by enhancing demand-based complementarities across customer groups in the portfolio. Amazon Prime was originally launched in 2005: "For a flat

[\$79] annual membership fee, you get unlimited two-day shipping for free.” (Jeff Bezos, CEO at Amazon, 2005). This offering remained unchanged until 2011, when Amazon Prime bundled access to unlimited video streaming (from an online catalogue). At first, several analysts considered the bundling of digital services with shipping a costly and questionable fit.

*"Skeptics thought we were crazy. At the time, they said 'Why would anybody want to spend that much for shipping?' and 'How the heck are they going to be able to afford it?'" [Greg Greeley, former Vice President at Amazon, in Greene (2015)]*

Some customers complained about the rise of the subscription price to \$99 in 2014 (although the bundle was expanded to include Prime Music, an audio streaming service, and Prime Photos, an unlimited online storage for photos). Yet, Amazon Prime subscribers grew steadily year after year—with a surprising ca. 50% increment in the year of the fee increase. Amazon has always been cautious in releasing precise data on Prime subscription results, but industry estimates pointed to ca. 20 million Prime members in 2013, ca. 60 million in 2016 (when the e-book library was included in the bundle), ca. 90 million in 2017, and recently Amazon officially declared 100 million customers in 2018 (at a \$119 annual membership).<sup>14</sup>

Industry experts have investigated how Prime helps reinforcing Amazon's bottom-line and create important synergies—particularly with the online marketplace.

*"Analysts have found Prime customers spend somewhere in the realm of three times as much on Amazon every year as their non-Prime counterparts. Even factoring in the extra costs, this spending makes Prime members much more valuable to Amazon's bottom line." (Wohlsen, 2015)*

Amazon Chief Financial Officer Tom Szkutak noted that "Prime members are buying more."

Industry data point to a +68% of online sale if compared to the non-subscribed counterpart (Source: RBC Capital – 2014 survey).

*"Those [Amazon Prime] members spend more than the typical Amazon browser—on average \$1,200 per year, compared to \$500 per year for nonmembers, according to the research firm." (Byrnes, 2016)*

Increases in sales pro capita do not only grow in terms of absolute quantity, but also in terms of category scope, as pointed by the Head of Amazon Prime:

*"Once you become a Prime member, your human nature takes over. You want to leverage your \$79 as much as possible. Not only do you buy more, but you buy in a broader set of categories."*

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<sup>14</sup> Today, Prime is available in U.S., Mexico, Singapore, India, Japan, U.K., Ireland, Germany, Austria, Italy, Spain, France, the Netherlands and Luxembourg.

*You discover all the selections we have, that you otherwise wouldn't have thought to look to Amazon for.” [Robbie Schwietzer, Vice President Amazon Prime in Neate (2014)].*

It is also worth considering the relation of Prime with the bundled video streaming service. While only 10% of customers declare to subscribe to Amazon Prime for its video platform (as the main attraction remains the free shipping deal), they tend to be locked-in by the video offer. Amazon's Chief Financial Officer declared that:

*“Those customers who are streaming are renewing at considerably higher rates (...) When customers come in for (...) free trials and they engage from a video content standpoint, we see the conversion being higher.” [Tom Szkutak, Amazon CFO, in (Levy, 2015)].*

Similarly, customers who sign up for Prime's 30-day free trial are more likely to convert to paying members if they use the video service during the first month (Source: Wired.com). By enriching its online catalogue with original and third-party content, Amazon increases the likelihood of consumers being lured in by streaming videos. As film series further increase the number of repeated views, Amazon's original productions are mostly dedicated to such a format. Finally, content consumption devices such as the Amazon Fire TV, Fire Stick, and Kindle provide a superior customer experience, and increase switching costs for the user which, serve to reinforce, in and of themselves, the lock-in effect of the Amazon portfolio offering.

*“Amazon makes original shows and movies to get more people to pay to watch its videos—and to make them more likely to buy toilet brushes and laundry detergent and shoes and diapers. Even some of Amazon's moves into hardware, especially Fire TV, make more sense as vehicles for locking customers into Prime than as devices meant to generate significant revenue streams in themselves.” (Wohlsen, 2015)*

Amazon Prime also contributes to driving sales on the MarketPlace (which are calculated as conversion rates from a user's search to purchase) thanks to time-limited initiatives such as Amazon Prime Day (started in 2015), during which Prime members receive special offers and discounts on a selected catalogue of products—Amazon's very own 'Black Friday.' Recent analysis tracked more than 160 billion monthly clicks, made by 100 million consumers, and revealed that the typical Amazon conversion rate is usually around 12.3%, but reached 18.6% on 2017 Prime Day. Consumers purchased on average 2.76 products on Prime Day 2017, compared with 2.24 products in the previous six weeks (Berthene, 2017). And yet, despite its pivotal role in development of the business model portfolio, Prime remains—and has been since its establishment—unprofitable as a stand-alone business model.

*“We expect Amazon Prime to be expensive for Amazon.com in the short term. In the long term, we hope to earn even more of your business, which will make it good for us too.” (Jeff Bezos, CEO at Amazon, 2005)*

*“We expect our cost of shipping to continue to increase to the extent our customers accept and use our shipping offers at an increasing rate” (Amazon.com Annual Report, 2018).*

Although structurally unprofitable, Amazon Prime plays nonetheless a fundamental *integrative* role in developing synergies between customer groups, as well as creating cross-selling opportunities across business models and product categories; it is therefore reasonable to consider Prime the strategic cornerstone for Amazon’s further diversification initiatives.

*“Prime membership growth is Amazon’s key asset (...) Prime growth remains the key jewel for Amazon going forward as cross-selling around Whole Foods customers and putting up more walls/barriers around its growing Prime customer base is a major ingredient in Amazon’s ability to fend off competition. International growth on Prime will also be another catalyst that we expect to play out in 2018 and should help further drive better than expected e-commerce retail growth in the year ahead.” (Ives, 2018).*

### **Developing an integrative business model**

[Insert Figure 2 about here]

Figure 2 presents a causal loop diagram depicting the value creation and value capture mechanisms initiated through business model diversification, and how it can, through demand-side complementarities, contribute to a firm’s competitive advantage. Where our point of focus is customer interaction, our aim is to expose how firms competing in the digital domain can engage with their customer groups in different ways, through a sustainable and competitive business model diversification strategy, itself further enhanced by an integrative business model. Following the methodology proposed by Casadesus-Masanell and Ricart (2011), the causal loop diagram has emerged as a useful tool to highlight key implications for both theory and practice, and has become a key contribution in the business model conversation (Casadesus-Masanell & Ricart, 2010). Underlined elements are choices made by the firm, and non-underlined elements are consequences. Arrows connect causes with consequences to identify positive feedback loops, and dashed arrows identify negative feedback loops. Elements inside a box are ‘rigid’ consequences or stocks, which accumulate over time and change slowly in response to the feedback loop that causes them; elements without a box are ‘flexible’, i.e., they are highly sensitive to the choices that initiated them.

Departing from the central element of the diagram, the main strategic choice of a firm is ‘business model diversification.’ We connect business model diversification to ‘network effects’ and ‘one-stop-shop’ effects, two valuable mechanisms of customer complementarity. These mechanisms lead to increasing adoption across (for NE) and within consumer groups (for OE). In fact, while OE effects allow for a growing number of consumers experiencing more types of products or services within the same business model, NE increase the incentives for one customer group (e.g., buyers) to further engage as another customer group (e.g., retailers) grows. Increasing adoption enhances ‘cross-selling,’ which fosters ‘firm growth’ and ‘revenues,’ and ultimately ‘competitive advantage.’ By increasing adoption across and within customer groups, the firm attracts new customers to the platform and therefore contributes to boosting the ‘customer base’ (i.e., the accumulated stock of customers) over time. This is not only associated with firm growth, but it also provides greater access to customer data which, more importantly, can be utilized to enhance ‘customer profiling and customization’—thus offering personalized consumption experiences. This, in turn, embeds the customer experience within the platform and creates significant ‘lock-in effects.’ Indeed, customers deciding to relocate their consumption will face high switching costs as they leave their consumption history behind. This digitally-driven strategy protects the company from losing customers to competitors, and accordingly sustains competitive advantage. In addition, profiling and customization generate superior opportunities for enhancing the effectiveness of the integrative business model(s).

Indeed, by definition the integrative business model endows the firm with a superior ability to generate NE and OE, as consumers may perceive additional advantages from engaging with the integrative business model, particularly when this bundles together multiple consumption experiences. Although potentially unprofitable, the integrative business model holds a critical role in developing synergies between customer groups, as well as cross-selling across business models and product categories (see the case of Amazon Prime). Nonetheless, managing an integrative business model and portfolio can be costly for the firm and, to that effect, it can reinvest revenues—mostly generated from cross-selling—to subsidize the integrative business model, which might be operating a reduced profit or at a loss.



Last but not least, the diagram shows how diversification strategies may unveil some potential tensions associated with portfolio complexity, which can hold both benefits and pitfalls. Complexity can increase ‘causal ambiguity’ and therefore make the firm’s strategy difficult to imitate, thus supporting and strengthening its competitive advantage. However, the same causal ambiguity could bring costs and challenges, and raise undetected substitution effects across business models in the portfolio, which may undermine the firm’s competitive advantage.

In summary, Figure 2 is meant to guide research into business model portfolios, as well as managerial priorities for business model diversification through demand-side complementarities. In addition, the diagram shows the conditions required for the development of an integrative business model that provides the organization with a sense of direction about further diversification, so as to add the most value to customers and the portfolio.

## DISCUSSION

### **Integrating the portfolio**

From a customer perspective, certain business models within a firm’s portfolio are more central than others. The number and type of customer complementarities define the *integrative business model*, and the advantages it can create for the firm are at least twofold. First, the firm’s overall portfolio benefits from opportunities for growth via cross-selling; second, the firm attains sustainable competitive advantage insofar as the complexity of replicating not just one but an entire map of customer complementarities substantially increases.

Where the number and quality of customer complementarities promises to shed some light on which business model within a portfolio creates more, and most, value to customers—and in effect to the portfolio—the integrative business model provides the organization with a sense of direction relating further diversification. We recognize that this is a partial (demand-side) view, and the question of diversification requires more research in order to integrate both resources and capabilities with customer complementarities and guide the expansion or reduction of business models. However, both the number of customer complementarities associated with the integrative business model, as well as the qualitative insights into value creation for customers in NE and OE scenarios can help drive the direction of the portfolio and, more generally, its management.

While it is clear what the advantages of an integrative business model are, some key questions remain open—but still deserve some (cautious) reflection, at the very least. First, the superior integrative properties of such business models may justify, to a certain extent, their limited or negative profitability. Within Amazon's portfolio, Prime emerges as such an example.

*“One thing Prime is not is profitable, says Forrester Research analyst Sucharita Mulpuru. Mulpuru estimates that free shipping on Prime purchases costs the online retailer \$1 billion a year. Because of the logistical challenges of getting shipments to a customer in 48 hours, Prime orders often have to be split up and sent from more than one location—a big cost for a retailer operating at a thin profit margin to start with. But even if Mulpuru is right, and the additional revenue from Prime is not enough to overcome the costs, that is unlikely to worry Amazon executives, she says. CEO Jeff Bezos's business philosophy, she notes, is “that too much of a profit means you've lost an opportunity to grow.” (Nanette Byrnes, MIT Technology Review, 2016).*

This can happen also in the off-line domains where, for example, Formula 1 teams develop multi-million high-tech cars despite the fact that race prizes do not cover the development costs (Aversa et al., 2015a). Still, the redeployment of unique technological assets and capabilities allows for F1 team to configure sustainable business model portfolios leveraging visibility and commercial opportunities. It remains an open question for future research whether and when loss making is a necessary condition for the success of the integrative business model.

Companies such as Amazon, Netflix, and Spotify (Ahuja & Novelli, 2016a; Aversa et al., 2019) have successfully leveraged the lock-in opportunities that ‘all-you-can-eat’ value propositions offer to their customers via monetization by subscription. A careful mapping of complementarities should reveal whether the core and well-known business models are, in fact, integrative business models (such as search or email for Alphabet), and if the mechanics outlined above work in other cases. Arguably, possible negative complementarities (such as data breaches) could slow down the growth of Facebook's social network (McRae, 2018) and as such future work should address the boundary conditions of integrative business models.

We suggest that integrative business models can be identified insofar as they are positioned at the center of a dense set of customer complementarities. Yet, this is the end-result of a strategic process which the firms have purposefully undertaken in order to use one or multiple business models as a springboard to develop others in the portfolio (Kim & Min, 2015; Sabatier et al., 2010). Which business models are thus eligible to become integrative? Although some business models might lend themselves to such operations, we acknowledge that electing a business model to hold the integrative

role is the outcome of a firm's decision-making process, possibly along repeated choices throughout its history (Bojovic et al., 2018). This is not only consistent with a recent stream of literature which envisions business model innovations as a result of cognitive processes (Baden-Fuller & Morgan, 2010; Chesbrough & Rosenbloom, 2002; Martins et al., 2015), but it also explains why companies with similar business model portfolios rely on different integrative business models (Ahuja & Novelli, 2016a).

### **Advantages for digital customer interaction**

The (choice of the) Amazon case—in being a pioneer Internet organization that has grown into a global megalith—specifically called for the exploration of how online customer interaction changes value creation and delivery across business model portfolios, if at all. Many of the customer complementarities mapped above would not be present if it wasn't for the Internet forming the bases of interactions: search for products, identification of customers, information technology service origination, market matching, and more. Despite the case obviously points to the study of digital environments, we need to ask and articulate what, exactly, are the advantages of digital customer interaction versus non-digital alternatives. Our use of the digital world refers to the intermediation of transactions via information technology, such as online matching, electronic payments, and communication using information technology rather than a meeting, agreement, and 'handshakes' between business partners. In Table 4 we look at direct interactions between at least one customer group and the firm, and compare the advantages brought about by digital customer interaction for the firm and the customer, specifically in the context of business model diversification.

[Insert Table 4 about here]

A few elements of digital customer interaction stand out in the Amazon case and, in particular, that of the integrative function of Prime in the business model portfolio. Beyond the obvious advantages of accessing a quasi-global customer base—via the Internet—the use of a subscription model also appears propitious. Continuous payments and access to multiple online services create a certain degree of *lock-in* effect for the customer—similar to an all-you-can-eat dining experience, where opting out would mean losing access to options to consume a variety of products and services. Similarly, *profiling* and *data analytics* represent specific digital resources available to the firm, when customer interaction involves digital traces in *consumption behavior* that enables customized

offerings and trust via *peer reviews*. Blending *online* and *offline services* serves convenience and offers (virtually) limitless possibilities for diversification into new product and service markets, as well as new business models. Lastly, digital customer interaction mobilizes *ad-hoc technologies* that support targeting and service levels, such as analytics, but also *ad-hoc complementary assets* (e.g., technological devices) that are for sale independently, such as Alexa, Fire, and Kindle in the case of Amazon. We suspect that the integrative function in a business model portfolio is not profitability but growth. Table 5 compares features that characterize a standard business model and an integrative business model.

[Insert Table 5 about here]

The comparative analysis of the two business model types reveals that both may have a similar multi-sided structure, which is usually digitally-enabled via internet-based technologies. This entails the possible emergence of NE and OE effect across customer groups. Yet, they differ in their strategic role and outcomes, profitability goal, benefits, growth opportunities, and replicability.

Both a standard business model and an integrative business model link together customer groups to create and capture value by enhancing the offering. Nonetheless, their key elements differ insofar as a standard business model is characterized by: online/offline retail, complementary services, use of the same own web and data infrastructures; while an integrative business model is identified by customer complementarities via subscription-based monetization and lock-in. An integrative business model is not necessarily profitable as a stand-alone business (as opposed to a standard business model) and can be considered as a cornerstone for a firm's diversification strategy through customer complementarities, i.e., by generating NEs and OEs. As a consequence, customer groups interacting with an integrative business model can benefit from the greatest number of NE and OE complementarities, which leads to enhanced consumption experiences and better customization, while standard business models usually focus on providing access to a larger range of products/services and prices.

In terms of benefits for the firm itself, an integrative business model helps in reinforcing its bottom-line and creating important synergies, as well as cross-selling across business models in the portfolio. In contrast, a standard business model focuses on increasing consumption within business

and product categories. Furthermore, an integrative business model reinforces and sustains firm competitive advantage as it hinders imitation and replicability, in light of the complex set of synergies and linkages across the business models within the portfolio.

Finally, another compelling difference relates to the strategic outcome of the two types of business models. On one hand, the standard business model plays a crucial role in sustaining firm profitability and revenue stability as it strategically supports product/service diversification. On the other hand, an integrative business model is the end-result of a voluntary strategic decision-making process, and further stands as the cornerstone for future business diversification initiatives.

## CONCLUSIONS

### *Towards a demand-side of business model diversification*

With this work, we respond to recent calls for more research on value creation in customer interaction, and the adoption of a demand-side perspective in strategy (Priem, 2007; Ye et al., 2012)—some of which have prominently featured in *Long Range Planning* (Priem et al., 2018). In doing so, we provide a series of theoretical contributions for researchers and practitioners engaging with the theory and practice of business model diversification in digital environments.

Our work directly engages with the literature on business models by addressing the opportunities and challenges of customer interaction for, and across, customer groups in dyadic and multi-sided business models (Amit & Zott, 2001; Baden-Fuller & Morgan, 2010; Chesbrough, 2010; Chesbrough & Rosenbloom, 2002; Khanagha et al., 2014, 2017; Mom et al., 2009; Teece, 2010). More specifically, our contribution is situated in the growing conversation on business model diversification—(Aversa et al., 2015a; Kim & Min, 2015; Markides & Charitou, 2004; Sabatier et al., 2010; Snihur & Tarzijan, 2018; Sohl et al., 2019; Velu & Stiles, 2013)—which has, so far, almost exclusively considered *a supply-side perspective* and thus wholly focused on a firm's resources and capabilities synergies—and in doing so has prevented a deeper understanding of the synergetic advantages arising for the different customer groups that interact with the organization. We complement this literature by advancing *a demand-side exploration* into business model portfolios, which is complementary and not substitutive of prior contributions. We try to provide a series of related contributions—such as the exploration of customer complementarities, the identification of the integrative business model, and the implication for running multiple business models in digital

domains—which are equally applicable and relevant to all the different conceptualizations within business model diversification—i.e., works on “hybrid business models” (e.g., Bonaccorsi et al., 2006; Velu & Stiles, 2013), “tandem business model” (Casadesus-Masanell & Tarzijan, 2012), “dual business model” (e.g., Markides & Charitou, 2004; Markides, 2013), “business model portfolios” (e.g., Sabatier et al., 2010; Snihur & Tarzijan, 2018), “business model configurations” (e.g., Aversa et al., 2015a).<sup>15</sup>

This research represents one of the very first empirical attempts to investigate, with a structured and theory-driven approach, the demand-side of business model diversification by distinguishing between two *key complementarity mechanisms* connecting customer groups within and between business models: *one-stop shop effects* (Kaufman & Lane, 1996) and *network effects* (Economides, 1996; Milgrom & Roberts, 1990). The *causal loop diagram* we advance leverages a common tool in business model research (Casadesus-Masanell & Ricart, 2010, 2011) to put forth an integrated and holistic understanding of how a business model diversification strategy affects the mechanisms leading to competitive advantage via customer complementarities.

As an epitome of the Internet economy, the Amazon case lends itself to further reflections as to the role of digital in business modelling and the relation with more traditional off-line businesses. In our discussion we isolate the *benefits of digital interaction for customers and for firms*, and compare it with traditional, off-line customer interaction. We discuss the granular dimensions of digital customer interaction such as: *Global access, Online subscription, Knowledge sharing, Profiling and customization, Blending online with offline services, Technological complementarities*.

Importantly, we respond to recent calls for empirical papers on digital businesses (Brynjolfsson & McAfee, 2012; George et al., 2014; Lanzolla & Frankort, 2016; Nambisan et al., 2017) by exploring an iconic case of a digital business platform where we investigate the specificities and dynamics over time of *supermodular* complementarities in consumption (Jacobides et al., 2018). Our study provides an empirical stepping-stone to not only investigate the emergence and nature of business ecosystems, but also to inquire into the possible competition among ecosystems (Eisenmann

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<sup>15</sup> In more general terms, our work also contributes to the traditional strategy literature on corporate diversification by advancing an empirical analysis of business model diversification (Ahuja & Novelli, 2016b; Christensen & Montgomery, 1981; Farjoun, 1998; Markides & Williamson, 1994; Puranam & Vanneste, 2016).

et al., 2011; Eisenmann et al., 2006), where future research can now analytically disentangle demand-side from supply-side effects by exploring the nature of customer interaction across all the business models in operation.

### *The Integrative Business Model*

We identify and present a definition of the *integrative business model*, as the cornerstone to the development of a firm's business model portfolio. We provide an overview of its role within the network of customer complementarities and discuss its merit and qualities, even when not profitable as stand-alone business model. Such a business model is not idiosyncratic to Amazon, and it can be identified (albeit with some adaptations and contextual differences) both in brick-and-mortar and digital companies. In the former case, consider the loyalty and frequent-flyer programs for airlines (e.g., Executive Miles Club for British Airways), which might risk being unprofitable, but nonetheless create extensive opportunities and incentives for the customer to engage with other consumption experiences (hotels, rentals, shopping, restaurants, travel insurances) whilst using the airline platform as a one stop shop portal, and have been leveraged to support competitive advantage in times of market downturn (Bryan, 2014).

In the digital realm, cases like Uber—and what is still an unprofitable transportation service (Fiegermah, 2017)—has only partially raised investors' concerns, as this could potentially become the integrative cornerstone of an emerging business model portfolio, wherein other kinds of customer interactions (food delivery, bike rental, and in the future driverless transportation) will leverage the transportation service's extensive customer data collection and profiling capabilities to nurture more profitable lines of business (Fiegermah, 2017). Iconic digital companies seem to have followed a similar pattern: by pivoting their business model diversification strategy onto integrative business models, which were initially unprofitable (e.g., Google's Gmail and search engine, and Facebook's social media platform), to connect and integrate other business models with superior profitability potential (Facebook sells advertising space to third-party companies, and further leverages user data for these companies to both target customers and tailor content). More importantly, the comparison of a *integrative business model* vs. a *standard business model*, suggests the possibility of tentatively

identifying a typology of business models within a portfolio, where each types responds to a specific strategic role for the functioning of the portfolio.

### *Methodological contributions and insights for practice*

Moreover, this study suggests a valuable empirical protocol to map the demand-side complementarities: a useful and noteworthy methodological contribution to foster consistent research on this underexplored topic, and help both scholars and practitioners to identify opportunities for competitive advantage within and outside the digital space. By implication, managers can now integrate supply-side portfolio analysis (Aversa et al., 2017) with demand-side analytics to inform portfolio management. Future research needs to address the potentially conflicting insights from portfolio management tools, which work on the basis of product diversification, and business model diversification. Our work guides the corporate strategist in re-visiting a business model portfolio with the explicit lens of customer complementarities when considering directions for growth. The integrative business model can act as a guidepost to portfolio enlargement, given its central role for value creation. It is important for managerial decision-making on pricing and customer interaction to not be stranded by capabilities and past resource commitments because the famously promising, yet equally difficult, subscription sale hinges on customer complementarities more than on the immediate profitability of the integrative business model (Wang, 2018).

### *Limitations and future research agenda*

Inevitably, our work presents several limitations which need careful reflection. First, as we acknowledge the nature of business models as simplified models (Baden-Fuller & Morgan, 2010) and cognitive schemas (Martins et al., 2015) to classify complex phenomena, we acknowledge that the identification of the different business models is to a certain extent cognitive (and subjective) in nature. This embodies one of the thorny caveats related to the investigation of business model portfolios: an observer should be able to distinguish the boundaries of one (or more) business model(s) within the complex activity set of an organization—or, simply put, the observer should identify where one business ends and another one starts (Puranam & Vanneste, 2016: 4). This means that other scholars might identify and mobilize different models, such as the popular “canvas” (Osterwalder & Pigneur, 2010) or include other (here: minor) business models in the analysis.



Second, we decided to closely focus on dissecting the mechanisms underpinning business growth in business model diversification in the digital domain. To respond to this empirical endeavor, we have selected a complex, but nonetheless single organization as most viable choice to allow depth and granularity of our observations. This, however, represents a trade-off which naturally limits our room for investigating other important mechanisms related to the causal linkage between business model changes and performance. Further, the need to remain parsimonious on our research question limited the possibility to include competition in the analysis. Competitive dynamics are, undoubtedly, worth future investigation. For example we acknowledge that the ‘winning’ formula of Amazon’s business model diversification might not encounter the same success in any country. For example, in the Netherlands, Amazon has emerged as one of the main players, but has to date failed to surpass the local incumbent in online retailing (i.e., Bol.com). We believe further research should better take explore how characteristics of the context might influence competition and the establishment of increasing returns of adoption across customer groups in a firm’s business model portfolio.

Third, we acknowledge the difficulty to disentangle the executive’s agency in selecting Prime as the integrative business model within the Amazon portfolio or, in other words, we are not able to clearly assess whether Prime’s original features made it an ideal candidate for an integrative business model. Managerial agency might be able to transform several business models into the integrative cornerstone by purposefully connecting it with a denser network of customer complementarities when designing value creation. Scholars should unpick this important matter and assess agency as a key determinant for establishing a integrative business model. Linked to this aspect, we acknowledge ours contribution represents only an initial attempt to develop a tentative typology of business models within portfolios; yet, this typology might not be currently complete, and we leave it to future studies to explore both the existence of other types, as well as their strategy function for business model diversification.

Fourth, the need for parsimony and space limitations did not allow us to explore within the scope of this work the direct interaction and interplay between supply-side complementarities and demand-side complementarities. Future studies should blend the two perspectives to achieve a more holistic understanding of business model diversification advantages. Overall, the Amazon case (as all single

case studies) might present some idiosyncrasies, and therefore we carefully warn to avoid generalizing to other cases.

To conclude, we believe that research has only partially unveiled the implication and opportunities provided by digital technologies for business model diversification. As technologies evolve and companies embrace innovative solutions, opportunities for business model diversification expand, which fosters the need to explore (with new theories, perspectives, and methods) the relation between these paramount drivers for firm competitive advantage. In this scenario, we believe the interaction with the customer will constantly represent a key aspect for firm success, thus making a demand-side perspective a useful standpoint to nurture value creation and value capture. Scholars will thus find plenty of scope to deepen and expand the timely and relevant conversation we addressed, and we hope our work will represent a valid support in their important endeavor.

**TABLE 1**  
**Amazon Timeline**

<b>Year</b>	<b>Events</b>
1994	Jezz Bezos founds Amazon
1995	Launch of <i>Amazon.com</i>
1997	Amazon IPO on NASDAQ
1998	Launch of Amazon Music Store and Video Store
1998	Launch of <i>Amazon.co.uk</i> and <i>Amazon.de</i>
1998-1999	Amazon starts to develop warehousing, fulfilment capabilities
1998-1999	Amazon starts to develop its technological infrastructure
1999	Amazon expands the scope of its products within Amazon Retail Online
1999	Launch of zShops
2000	Launch of Amazon Marketplace
2000	Launch of <i>Amazon.fr</i> and <i>Amazon.co.jp</i>
2001	Launch of Merchant Services Programs
2001	Launch of <i>Amazon.ca</i> .
2001-2004	Amazon improves its distribution and inventory requirements
2004	Amazon forms 'Lab126' to design the Kindle and Fire
2005	Launch of Amazon Prime
2005	Launch of Amazon Mechanical Turk
2006	Launch of Amazon Fulfilment
2006	Launch of Amazon Web Services
2007	Launch of Amazon Fresh
2007-2008	Launch of Amazon Kindle and Kindle 2
2009	Launch of 'Amazon Web Services' in Asia
2011	Launch of <i>Instant Video</i>
2011	Launch of Amazon Cloud Drive
2011	Launch of Kindle Fire, Kindle Touch, and Kindle Touch 3G
2012	Launch of AWS Marketplace
2013-2014	Launch of Fire TV and Amazon Fire Phone
2014	Launch of <i>Prime Music</i>
2014	Launch of first <i>Amazon TV series</i>
2015	First Amazon Prime Day
2015	Amazon retrieves Fire Phone from the market
2015	Launch of Amazon Physical Stores
2016	Amazon starts to think about new delivery options
2017	Amazon acquires Whole Food
2017	Amazon begins search for Amazon HQ2, second company headquarters
2018	Launch of Amazon.go cashier-less grocery store
2018	Launch of Amazon in Turkey

**TABLE 2**  
**Data sources**

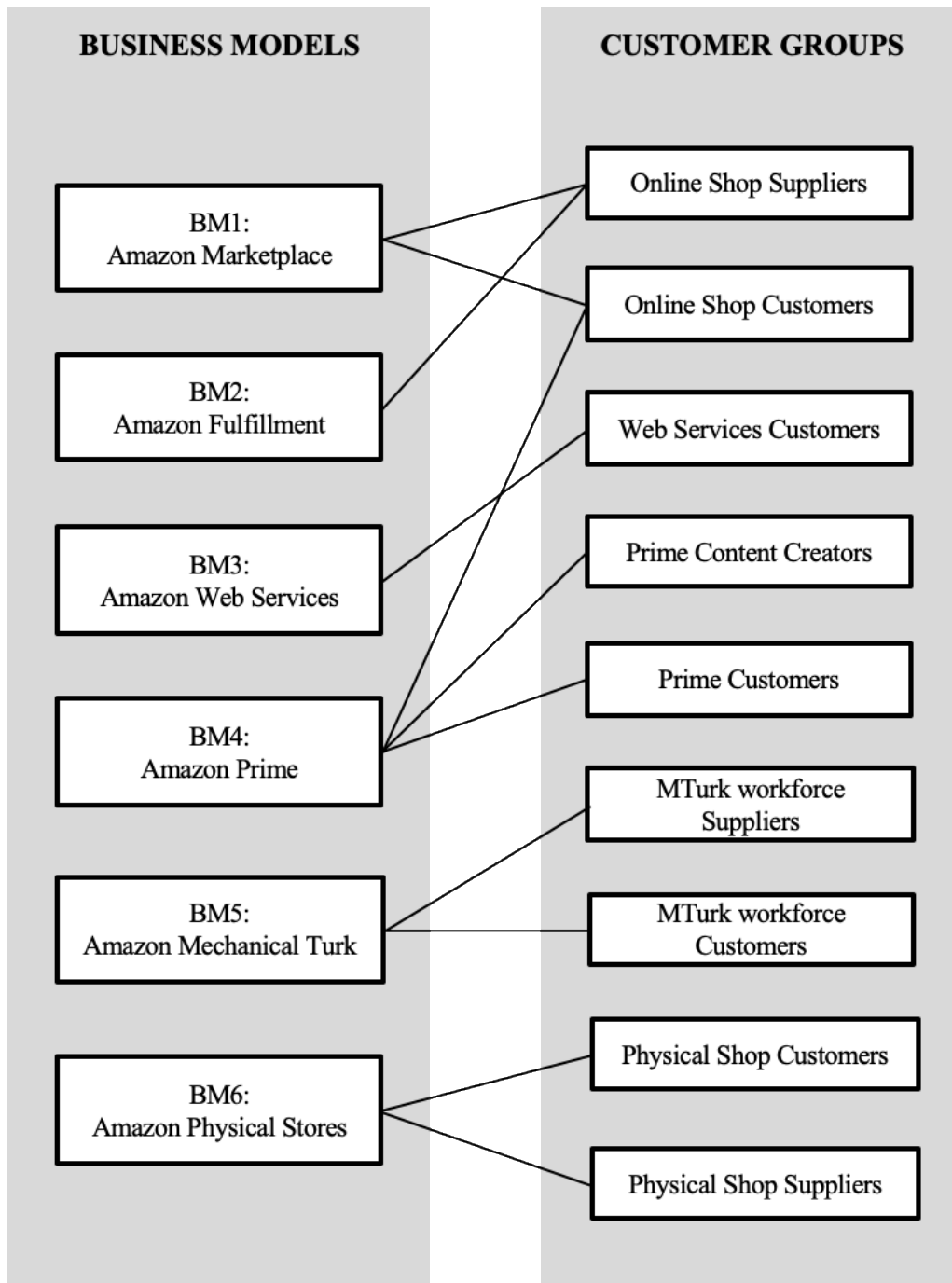
<b>Type of source</b>	<b>Sources</b>	<b>Number of documents</b>	<b>Number of pages</b>
<i>Archival records</i>	US Securities Exchange Commission	1	51
	Amazon Investor Relations	33	1,813
<i>Press</i>	The Economist	8	26
	Forbes	11	21
	The New York Times	16	31
	Bloomberg	15	27
	Financial Times	11	28
	The International Herald Tribune	4	10
	The Wall Street Journal	12	28
	Coventry Evening Telegraph	2	3
	Investor's Business Daily	3	4
	Journal of the International Academy for Case Studies	3	39
	New Media Age	2	4
	The Guardian	2	5
	Others		
<i>Press releases and Newswires</i>	Business Wire	16	17
	The Associated Press State & Local wire	3	4
	The Associated Press	8	12
<i>Industry reports</i>	MarketLine	4	113
	EuroMonitor Passport	7	242
<i>Web-based publications</i>	Econsultancy.com	1	5
	Eweek.coz	4	14
	Businessinsider.com	13	24
	CNET.com	9	10
	Gizmodo	2	11
	Hbr.com	7	12
	Wired.com	11	27
	Fastcompany.com	7	36
	Techcrunch.com	4	5
	Theverge.com	7	9
	Time.com	5	7
	Tech2.com	5	5
	Other	3	8
<b>Total</b>		<b>244</b>	<b>2,662</b>

**TABLE 3**  
**Amazon's business models (November 2015 – October 2018)**

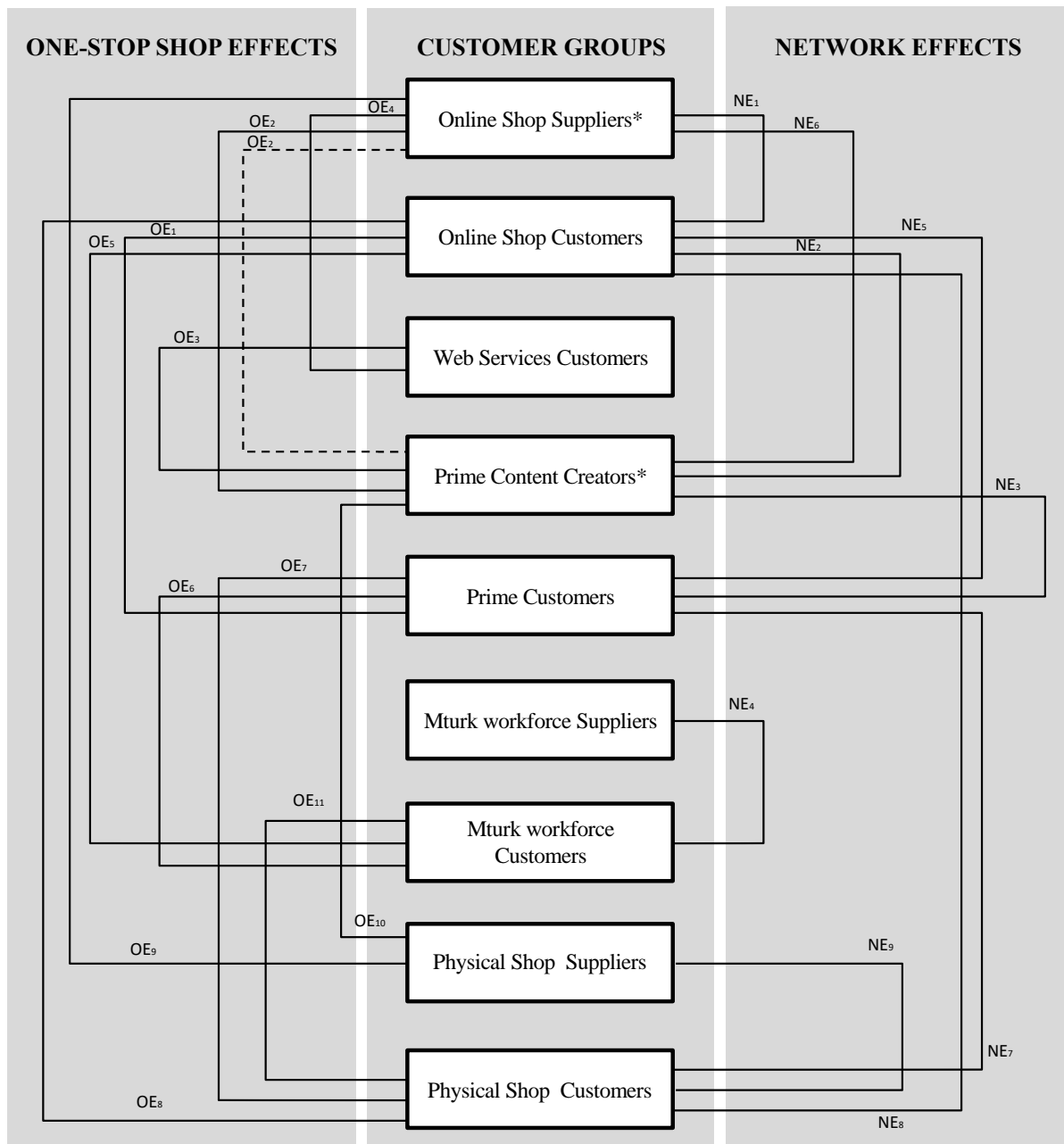
	<b>BM1</b> <b>Amazon Marketplace</b>	<b>BM2</b> <b>Amazon Fulfilment</b>	<b>BM3</b> <b>Amazon Web Services</b>
<b>Customer sensing</b>	<i>Multi-sided BM:</i> Amazon links together 2 customer groups—Online Customers and Online Suppliers (including Amazon as producer and/or vendor, and third-party sellers) on Amazon Marketplace.	<i>Dyadic BM:</i> Amazon connects 1 singular customer group—Online Shop Suppliers on Amazon Marketplace.	<i>Dyadic BM:</i> Amazon connects 1 singular customer group—Amazon Web Services Customers.
<b>Customer interaction</b>	<i>Engagement: “Bus”</i> Amazon provides access to a huge range of products/services and prices. Online Customers can post reviews, rate the products, and have access to other customer's reviews. Online Suppliers can list their products for free on Amazon Marketplace through a single seller account.	<i>Engagement: “Taxi”</i> Amazon Fulfilment centers store, pick, pack and ship products to Marketplace Customers, and handle customer services. Moreover, Fulfilment offers additional services aimed at scaling business and extending Suppliers' customer base.	<i>Engagement: “Taxi”</i> Amazon Web Services uses its automated web-infrastructure to offer cloud-based computing platforms. In addition, offers its own servers to Web Services Customers that want to run micro-services, store movies and handle internet traffic.
<b>Value-chain linkages</b>	<i>Highly integrated system:</i> Amazon links together Online Customers and Sellers through an internet-based self-service platform. Its high-performing servers enables Amazon to deal with huge volumes of traffic. All payments are handled by Amazon, thus controlling fraud protection.	<i>Integrated network:</i> Amazon takes care of shipping, inventory management and warehousing. Amazon future mission is to become independent in shipping products by eliminating partnerships with third parties (UPS, FedEx) for delivery and logistics services.	<i>Highly integrated system:</i> Amazon Web Services leverages its own web and data infrastructures and sells it to customers, by allowing companies and individuals avoid the hassle of buying and running their own hardware.
<b>Monetization</b>	<i>Single Pricing:</i> Online Customers pay the price listed on the website. Single pricing: Online Suppliers pay a fixed percentage of customers purchase price. Amazon collects payments from customers upon purchase but pays out money to Suppliers later (CCC: roughly—30 days).	<i>Pay-as-you go monetization system:</i> Amazon charges fee per storage space and order fulfilment. It does not charge shipping costs. Charges for optional business services may apply.	<i>Pay-as-you go monetization system:</i> Amazon charges fee per storage space and for levels of selling automation provided to Amazon Web Customers. The service and its price are tailored to each customer's requirements.

	<b>BM4 Amazon Prime</b>	<b>BM5 Amazon Mechanical Turk</b>	<b>BM6 Amazon Physical Stores</b>
<b>Customer sensing</b>	<i>Multi-sided BM:</i> Amazon links together 3 customer groups—Online Shop Customers, Prime Customers, and Content Creators (including Amazon as producer and/or vendor, and third-party sellers).	<i>Multi-sided BM:</i> Amazon links together 2 customer groups—MTurk workforce Customers and MTurk workforce Suppliers.	<i>Multi-sided BM:</i> Amazon links together 2 customer groups—Physical Shop Customers and Physical Shop Suppliers in the Amazon Physical Stores.
<b>Customer interaction</b>	<i>Engagement: “Bus”</i> Amazon offers complementary services to the online shopping on Amazon Marketplace, which include: early access to sales, Kindle library, storage service, video and music streaming, expedited shipping, photo storage, and 30-day trial.	<i>Engagement: “Bus”</i> Amazon connects MTurk Suppliers of workforce—who seek additional revenues by offering their services to satisfy the needs of MTurk customers—who seek services which cannot be completed by a computer.	<i>Engagement: “Bus”</i> Amazon offers a well-selected offer of products (using data-driven design of Amazon Online Customers previous purchases in a specific geographical area) into its Physical Stores.
<b>Value-chain linkages</b>	<i>Highly integrated system:</i> complement services leverage assets controlled by Amazon. Amazon usex its existing services to satisfy its customer groups’ needs.	<i>Highly integrated system:</i> Amazon links together the two target customer groups through its technological platform, thus facilitating their interactions. The compensation for the workforce can be spent on Amazon Marketplace and Prime through coupons or gift cards, or transferable directly to the bank account.	<i>Highly integrated system:</i> Amazon links together Physical Customers and Suppliers into its brick-and-mortar shops. Amazon Physical Stores are designed to create a shopping experience across the company’s physical and digital businesses. Indeed, Physical Shop Customers require a Prime account to buy books in the store at cheaper prices.
<b>Monetization</b>	<i>Single pricing:</i> Prime Customers and Online Shop Costumer have an <i>annual subscription</i> of 99\$ paid in full. <i>Single pricing:</i> Content Creators pay a fixed percentage of customers purchase price	<i>Single pricing:</i> MTurk Customers pay roughly a 20% transaction fee directly to Amazon, upon completed task. <i>Pay-as-you-go monetization system:</i> MTurk Suppliers receive gift card spendable on Amazon Marketplace and/or Prime as a compensation for their services.	<i>Dual pricing:</i> Physical Customers can pay two different price—a cheaper one exclusively for Prime member—or the price listed on the website. Thus, to have access at cheaper prices, Physical Shop Customers need to have a Prime <i>annual subscription</i> of 99\$.

**FIGURE 1a**  
**Business models and customer groups**  
 (Configuration November 2015 – October 2018)



**FIGURE 1b**  
**Customer complementarities**  
**(Configuration November 2015 – October 2018)**



**Notes**

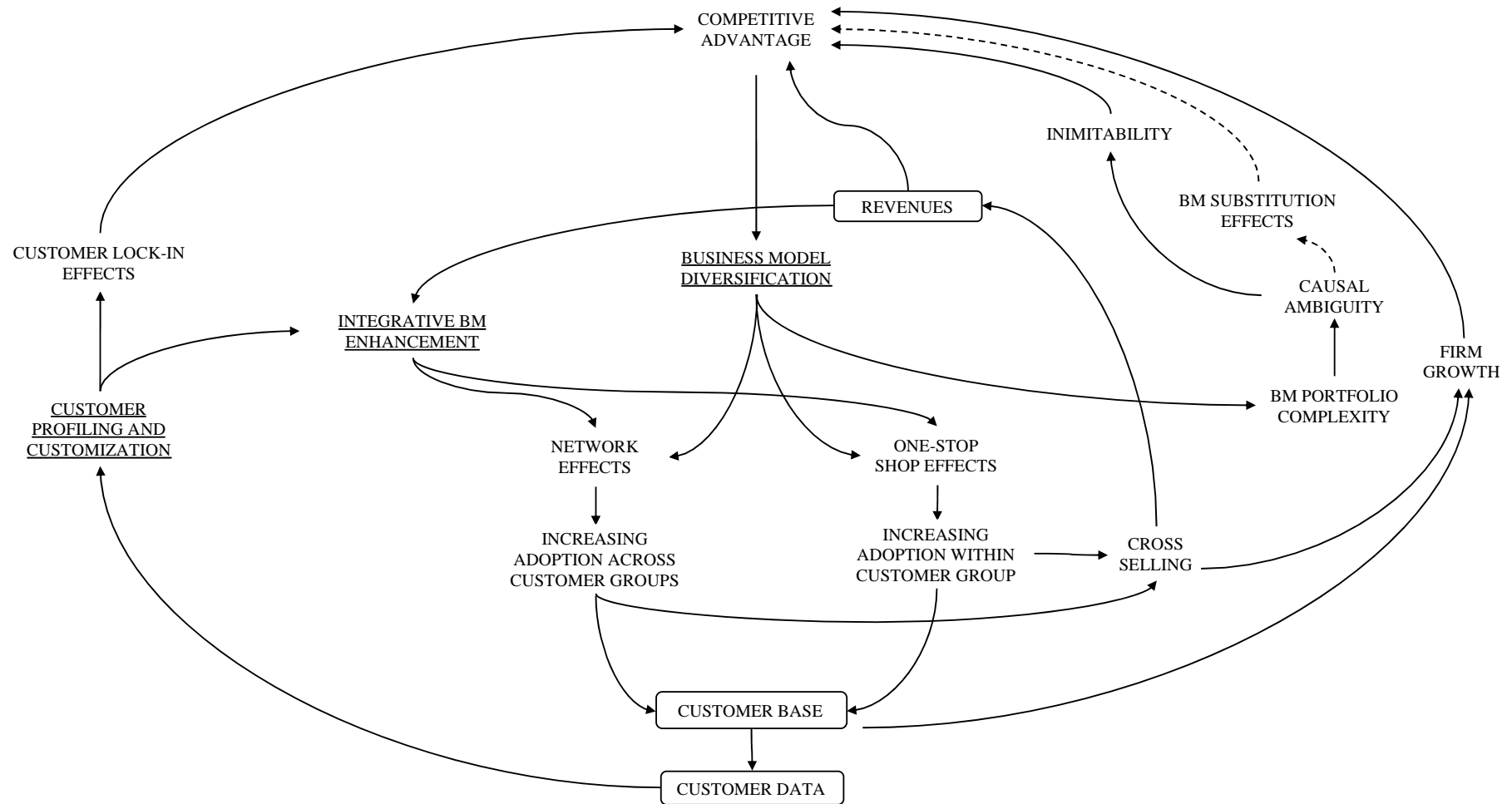
———— Positive effects.

----- Negative effects.

\* Includes: Amazon as producer and/or vendor; Third parties as vendors.



**FIGURE 2:**  
**CAUSAL LOOP DIAGRAM OF BUSINESS MODEL DIVERSIFICATION THROUGH DEMAND-SIDE COMPLEMENTARITIES**



**TABLE 4**  
**Digital customer interaction: Advantages for the customer and the firm**

<b>Digital customer interaction</b>	<b>Advantages for the customer</b>	<b>Advantages for the firm</b>
<i>Global access</i>	Broader and easier access to other (incl. unrelated) services via internet.	Global market access and matching of customers across businesses to create value and monetize via internet
<i>Online subscription</i>	Convenience and decrease of unitary costs per service (all you can eat). Convenience of payment through one fee for multiple services.	Increase in consumption across businesses. Stable revenue and reduced risk of diversification building on existing customer base.
<i>Knowledge sharing</i>	Reduced costs to access and write reviews across services and products.	Increased customer trust and thus purchases across multiple business models.
<i>Profiling and customization</i>	Profiling acts as a funnel of different consumption experiences, which leads to better customization.	Individual customer profiles lead to better understanding of preferences and behavior for tailored commercial offering.
<i>Blending online with offline services</i>	Seamless experience and convenience.	Business model and product diversification opportunities almost limitless.
<i>Technological complementarities</i>	Technologies both enable the customer experience in the transaction as well as post purchase (gadgets, entertainment, access).	New technologies such as analytics and data services are enabled by the existing customer base for testing and open new opportunities for diversification.

**TABLE 5**  
**Comparison between “standard business model” and “integrative business model”**

<b>Features</b>	<b>Standard BM</b>	<b>Integrative BM</b>
<i>Strategic Role</i>	<ul style="list-style-type: none"> <li>- A potentially stand-alone component of a firm’s business model diversification.</li> <li>- It monetizes a consistent set of products and services.</li> </ul>	<ul style="list-style-type: none"> <li>- A connecting component of a firm’s business model diversification.</li> <li>- It bundles a diverse set of products and services, often mobilized through other business models in the portfolio.</li> </ul>
<i>Profitability</i>	<ul style="list-style-type: none"> <li>- Profitability goal.</li> <li>- Profitable as a stand-alone business model.</li> </ul>	<ul style="list-style-type: none"> <li>- Customer complementarity goal (enhancement of one-stop shop and network effects).</li> <li>- Not necessarily profitable (often unprofitable as a stand-alone business model).</li> </ul>
<i>Key Elements</i>	<ul style="list-style-type: none"> <li>- Online/offline retail, complementary services, use of the same own web and data infrastructures.</li> </ul>	<ul style="list-style-type: none"> <li>- Customer complementarities via subscription-based monetization, lock-in, and cross-selling across business models.</li> </ul>
<i>Customer Benefits</i>	<ul style="list-style-type: none"> <li>- Access to a broader range of products/services and prices.</li> </ul>	<ul style="list-style-type: none"> <li>- Building of different consumption experiences often delivered by different business models.</li> </ul>
<i>Firm Benefits</i>	<ul style="list-style-type: none"> <li>- Increases consumption within a single business model.</li> <li>- Increases firm's competitive advantage through superior monetization.</li> </ul>	<ul style="list-style-type: none"> <li>- Leads to new customer interactions via complementarities.</li> <li>- Increases consumption across business models.</li> <li>- Increases the firm’s competitive advantage through superior value creation via demand-based complementarities within the business model portfolio.</li> </ul>
<i>Growth Opportunities</i>	<ul style="list-style-type: none"> <li>- Increasing sales: Matches customers within the desired business model to create value and monetize.</li> </ul>	<ul style="list-style-type: none"> <li>- Increasing cross-selling; Matches customers across apparently loosely related products and categories offered by the firm.</li> </ul>
<i>Replicability</i>	<ul style="list-style-type: none"> <li>- Easy to imitate and replicate, by focusing on the key activities.</li> </ul>	<ul style="list-style-type: none"> <li>- Hard to imitate and replicate, due to the complex set of complementarities with external business models.</li> </ul>
<i>Strategic Outcomes</i>	<ul style="list-style-type: none"> <li>- Strategic cornerstone for a firm’s profitability and stable revenue.</li> <li>- Product/service diversification.</li> </ul>	<ul style="list-style-type: none"> <li>- Strategic cornerstone for a firm’s further diversification initiatives building on the existing customer base.</li> <li>- Business model diversification.</li> </ul>

## REFERENCES

- Adner, R., & Kapoor, R. 2010. Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal*, 31(3): 306-333.
- Ahuja, G., & Novelli, E. 2016a. Incumbent responses to an entrant with a new business model: Resource co-deployment and resource re-deployment strategies. *Advances in Strategic Management*, 35: 125-133.
- Ahuja, G., & Novelli, E. 2016b. Redirecting research efforts on the diversification-performance linkage: The search for synergy. *Academy of Management Annals*: annals. 2014.0079.
- Amit, R., & Zott, C. 2001. Value creation in e-business. *Strategic Management Journal*, 22(6-7): 493-520.
- Ansari, S., Garud, R., & Kumaraswamy, A. 2016. The disruptor's dilemma: TiVo and the US television ecosystem. *Strategic Management Journal*, 37(9): 1829-1853.
- Aversa, P., Furnari, S., & Haefliger, S. 2015a. Business model configurations and performance: A qualitative comparative analysis in Formula One racing, 2005–2013. *Industrial and Corporate Change*, 24(3): 655-676.
- Aversa, P., Haefliger, S., & Reza, D. 2017. Building a winning a business model portfolio. *MIT Sloan Management Review*, 58(4): 49-54.
- Aversa, P., Haefliger, S., Rossi, A., & Baden-Fuller, C. 2015b. From Business Model to Business Modeling: Modularity and Manipulation. *Advances in Strategic Management*, 33: 151-185.
- Aversa, P., Hervás-Drane, A., & Evenou, M. 2019. Business model responses to digital piracy. *California Management Review*, 61(2): 30-58.
- Baden-Fuller, C., & Haefliger, S. 2013. Business Models and Technological Innovation. *Long Range Planning*, 46(6): 419-426.
- Baden-Fuller, C., & Mangematin, V. 2013. Business models: A challenging agenda. *Strategic Organization*, 11(4): 418-427.
- Baden-Fuller, C., & Mangematin, V. 2015. Business Models and Modelling Business Models. *Advances in Strategic Management*, 33: 11-22.
- Baden-Fuller, C., & Morgan, M. S. 2010. Business models as models. *Long Range Planning*, 43(2): 156-171.
- Barney, J. B. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1): 99-120.
- Berthene, A. 2017. Amazon's Prime Day conversion rate, traffic and transactions surge. *DigitalCommerce360.com*, <https://www.digitalcommerce360.com/2017/07/14/amazons-prime-day-conversion-rate-traffic-transactions-surge/>.
- Björkdahl, J. 2009. Technology cross-fertilization and the business model: The case of integrating ICTs in mechanical engineering products. *Research Policy*, 38(9): 1468-1477.
- Bojovic, N., Genet, C., & Sabatier, V. 2018. Learning, signaling, and convincing: The role of experimentation in the business modeling process. *Long Range Planning*, 51(1): 141-157.
- Bonaccorsi, A., Giannangeli, S., & Rossi, C. 2006. Entry Strategies under Competing Standards: Hybrid Business Models in the Open SourceSoftware Industry. *Management Science*, 52(7): 1085-1098.
- Bryan, V. 2014. Frequent flyer schemes revamped to drive profits in tough times for airlines. *Reuters.co.uk*, <https://www.reuters.com/article/airlines-frequentflyers/frequent-flyer-schemes-revamped-to-drive-profits-in-tough-times-for-airlines-idUSL6N0P442420140811>.
- Brynjolfsson, E., & McAfee, A. 2012. *Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy*: Digital Frontier Press.
- Byrnes, N. 2016. How Amazon loses on Prime and still wins. *MIT Technology Review*, <https://www.technologyreview.com/s/601889/how-amazon-loses-on-prime-and-still-wins/>.
- Casadesus-Masanell, R., & Ricart, J. E. 2010. From strategy to business models and onto tactics. *Long Range Planning*, 43(2): 195-215.
- Casadesus-Masanell, R., & Ricart, J. E. 2011. How to design a winning business model. *Harvard Business Review*, 89(1/2): 100-107.

- Casadesus-Masanell, R., & Tarzijan, J. 2012. When one business model isn't enough. *Harvard Business Review*, 90: 132-137.
- Chesbrough, H. 2010. Business model innovation: opportunities and barriers. *Long range planning*, 43(2): 354-363.
- Chesbrough, H., & Rosenbloom, R. S. 2002. The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, 11(3): 529-555.
- Christensen, H. K., & Montgomery, C. A. 1981. Corporate economic performance: Diversification strategy versus market structure. *Strategic Management Journal*, 2(4): 327-343.
- Cozzolino, A., Verona, G., & Rothaermel, F. T. 2018. Unpacking the Disruption Process: New Technology, Business Models, and Incumbent Adaptation. *Journal of Management Studies*, 55(7): 1166-1202.
- Economides, N. 1996. The economics of networks. *International journal of industrial organization*, 14(6): 673-699.
- Economides, N., & Katsamakas, E. 2006. Two-Sided Competition of Proprietary vs. Open Source Technology Platforms and the Implications for the Software Industry. *Management Science*, 52(7): 1057-1072.
- Eisenhardt, K. M. 1989. Building Theories from Case Study Research. *The Academy of Management Review*, 14(4): 532-550.
- Eisenhardt, K. M., & Graebner, M. E. 2007. Theory building from cases: Opportunities and challenges. *The Academy of Management Journal*, 50(1): 25-32.
- Eisenmann, T., Parker, G., & Van Alstyne, M. 2011. Platform envelopment. *Strategic Management Journal*, 32(12): 1270-1285.
- Eisenmann, T., Parker, G., & Van Alstyne, M. W. 2006. Strategies for two-sided markets. *Harvard business review*, 84(10): 92.
- Evans, D. S. 1987. The relationship between firm growth, size, and age: Estimates for 100 manufacturing industries. *The journal of industrial economics*: 567-581.
- Farjoun, M. 1998. The independent and joint effects of the skill and physical bases of relatedness in diversification. *Strategic Management Journal*, 19(7): 611-630.
- Fiegermah, S. 2017. Uber is losing billions: Here's why investors don't care. *CNN.com*, <https://money.cnn.com/2017/06/01/technology/business/uber-losses-investors/index.html>.
- Foss, N. J., & Saebi, T. 2017. Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of Management*, 43(1): 200-227.
- Furnari, S. 2015. A cognitive mapping approach to business models: Representing causal structures and mechanisms. *Advances in Strategic Management*, 33: 207-239.
- George, G., Haas, M. R., & Pentland, A. 2014. Big data and management. *Academy of Management Journal*, 57(2): 321-326.
- Girotra, K., & Netessine, S. 2013. Amazon Constantly Audits its Business Model. *HBR.org*, <https://hbr.org/2013/11/amazon-constantly-audits-its-business-model>.
- Greene, J. 2015. 10 years later, Amazon celebrates Prime's growth. *Phys.org*, <https://phys.org/news/2015-02-years-amazon-celebrates-prime-growth.html#jCp>.
- Hannah, D. P., & Eisenhardt, K. M. 2018. How firms navigate cooperation and competition in nascent ecosystems. *Strategic Management Journal*, 39(12): 3163-3192.
- Ives, D. 2018. Expecting another 1Q gem from Amazon; Consumer flywheel humming. *GBHinsights.com*, <https://gbhinsights.com/expecting-another-1q-gem-from-amazon-consumer-flywheel-humming/>.
- Jacobides, M. G., Cennamo, C., & Gawer, A. 2018. Towards a theory of ecosystems. *Strategic Management Journal*, 39(8): 2255-2276.
- Kapoor, R., & Lee, J. M. 2013. Coordinating and competing in ecosystems: How organizational forms shape new technology investments. *Strategic Management Journal*, 34(3): 274-296.
- Kaufman, A., Merenda, M., & Wood, C. 1996. Corporate Downsizing and the Rise of 'Problem-solving Suppliers: the Case of Hadco Corporation. *Industrial and Corporate Change*, 5(3): 723-759.
- Kaufman, F. C., & Lane, P. M. 1996. A new look at one-stop shopping: a TIMES model approach to matching store hours and shopper schedules. *Journal of Consumer Marketing*, 13(1): 4-25.

- Khanagha, S., Volberda, H., & Oshri, I. 2014. Business model renewal and ambidexterity: structural alteration and strategy formation process during transition to a Cloud business model. *R&D Management*, 44(3): 322-340.
- Khanagha, S., Volberda, H., & Oshri, I. 2017. Customer co-creation and exploration of emerging technologies: the mediating role of managerial attention and initiatives. *Long Range Planning*, 50(2): 221-242.
- Kim, S. K., & Min, S. 2015. Business Model Innovation Performance: When does Adding a New Business Model Benefit an Incumbent? *Strategic Entrepreneurship Journal*, 9(1): 34-57.
- Klang, D., Wallnöfer, M., & Hacklin, F. 2014. The Business Model Paradox: A Systematic Review and Exploration of Antecedents. *International Journal of Management Reviews*, 16(4): 454-478.
- Lanzolla, G., & Frankort, H. T. 2016. The Online Shadow of Offline Signals: Which Sellers Get Contacted in Online B2B Marketplaces? *Academy of Management Journal*, 59(1): 207-231.
- Lee, C.-H., Venkatraman, N., Tanriverdi, H., & Iyer, B. 2010. Complementarity-based hypercompetition in the software industry: Theory and empirical test, 1990–2002. *Strategic Management Journal*, 31(13): 1431-1456.
- Levy, A. 2015. Why Amazon is willing to spend billions on Prime Instant Video. *BusinessInsider.com*, <https://www.businessinsider.com/why-amazon-is-willing-to-spend-billions-on-prime-instant-video-2015-2?IR=T>.
- Locke, K. 2001. *Grounded theory in management research*. London, UK: SAGE.
- Markides, C., & Charitou, C. D. 2004. Competing with dual business models: A contingency approach. *The Academy of Management Executive*, 18(3): 22-36.
- Markides, C., & Oyon, D. 2010. What to do against disruptive business models (when and how to play two games at once). *MIT Sloan Management Review*, 51(4): 25.
- Markides, C. C. 2013. Business model innovation: What can the ambidexterity literature teach us? *The Academy of Management Perspectives*, 27(4): 313-323.
- Markides, C. C. 2015. Research on business models: Challenges and opportunities, *Business models and modelling*: 133-147: Emerald Group Publishing Limited.
- Markides, C. C., & Williamson, P. J. 1994. Related diversification, core competences and corporate performance. *Strategic Management Journal*, 15(S2): 149-165.
- Martins, L. L., Rindova, V. P., & Greenbaum, B. E. 2015. Unlocking the Hidden Value of Concepts: A Cognitive Approach to Business Model Innovation. *Strategic Entrepreneurship Journal*, 9(1): 99-117.
- Massa, L., Tucci, C., & Afuah, A. 2017. A critical assessment of business model research. *Academy of Management Annals*, 11(1): 73-104.
- McRae, H. 2018. People may be leaving Facebook over privacy fears, but social media is here to stay. *Independent.co.uk*, <https://www.independent.co.uk/voices/social-media-facebook-mark-zuckerberg-google-data-privacy-a8315986.html>.
- Messinger, P. R., & Narasimhan, C. 1997. A model of retail formats based on consumers' economizing on shopping time. *Marketing science*, 16(1): 1-23.
- Mikhalkina, T., & Cabantous, L. 2015. Business model innovation: How iconic business models emerge. *Advances in Strategic Management*, 33(1): 59-95.
- Milgrom, P., & Roberts, J. 1990. Rationalizability, learning, and equilibrium in games with strategic complementarities. *Econometrica: Journal of the Econometric Society*: 1255-1277.
- Mom, T. J., Van Den Bosch, F. A., & Volberda, H. W. 2009. Understanding variation in managers' ambidexterity: Investigating direct and interaction effects of formal structural and personal coordination mechanisms. *Organization Science*, 20(4): 812-828.
- Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. 2017. Digital innovation management: Reinventing innovation management research in a digital world. *MIS Quarterly*, 41(1).
- Neate, R. 2014. Amazon's Jeff Bezos: the man who wants you to buy everything from his company. *TheGuardian.co.uk*, <https://www.theguardian.com/theobserver/2014/jun/22/jeff-bezos-amazon-boss-wants-to-sell-you-everything>.
- Nucciarelli, A., Li, F., Fernandes, K. J., Goumagias, N., Cabras, I., Devlin, S., Kudenko, D., & Cowling, P. 2017. From value chains to technological platforms: The effects of crowdfunding in the digital game industry. *Journal of Business Research*, 78: 341-352.



- Osterwalder, A., & Pigneur, Y. 2010. *Business model generation: a handbook for visionaries, game changers, and challengers*: John Wiley & Sons.
- Penrose, E. 1959. *The Theory of the Growth of the Firm*. Oxford: Blackwell.
- Priem, R. L. 2007. A consumer perspective on value creation. *Academy of Management Review*, 32(1): 219-235.
- Priem, R. L., & Swink, M. 2012. A demand-side perspective on supply chain management. *Journal of Supply Chain Management*, 48(2): 7-13.
- Priem, R. L., Wenzel, M., & Koch, J. 2018. Demand-side strategy and business models: Putting value creation for consumers center stage. *Long range planning*, 51(1): 22-31.
- Puranam, P., & Vanneste, B. 2016. *Corporate Strategy*. Cambridge: Cambridge University Press.
- Rietveld, J. 2018. Creating and capturing value from freemium business models: A demand-side perspective. *Strategic Entrepreneurship Journal*, 12(2): 171-193.
- Rietveld, J., & Eggers, J. 2018. Demand Heterogeneity in Platform Markets: Implications for Complementors. *Organization Science*, 29(2): 304-322.
- Rietveld, J., Schilling, M. A., & Bellavitis, C. 2019. Platform strategy: Managing ecosystem value through selective promotion of complements. *Organization Science*, 30(6): 1232-1251.
- Ritala, P., Golnam, A., & Wegmann, A. 2014. Coopetition-based business models: The case of Amazon. com. *Industrial Marketing Management*, 43(2): 236-249.
- Rochet, J. C., & Tirole, J. 2006. Two-sided markets: a progress report. *The RAND Journal of Economics*, 37(3): 645-667.
- Rumble, R., & Mangematin, V. 2015. Business model implementation: The antecedents of multi-sidedness, *Business Models and Modelling*: 97-131: Emerald Group Publishing Limited.
- Sabatier, V., Mangematin, V., & Rousselle, T. 2010. From recipe to dinner: business model portfolios in the European biopharmaceutical industry. *Long Range Planning*, 43(2): 431-447.
- Sawhney, M., Verona, G., & Prandelli, E. 2005. Collaborating to create: The Internet as a platform for customer engagement in product innovation. *Journal of Interactive Marketing*, 19(4): 4-17.
- Siggelkow, N. 2007. Persuasion with case studies. *Academy of Management Journal*, 50(1): 20-24.
- Sirmon, D. G., Hitt, M. A., Ireland, R. D., & Gilbert, B. A. 2011. Resource orchestration to create competitive advantage breadth, depth, and life cycle effects. *Journal of Management*, 37(5): 1390-1412.
- Snihur, Y., & Tarzijan, J. 2018. Managing complexity in a multi-business-model organization. *Long Range Planning*, 51(1): 50-63.
- Sohl, T., & Vroom, G. 2017. Mergers and acquisition revisited: The role of business model relatedness. *Advances in Mergers and Acquisitions*, 17(Forthcoming).
- Sohl, T., Vroom, G., & McCann, B. T. 2019. Business Model Diversification and Firm Performance: A Demand-Side Perspective. *Strategic Entrepreneurship Journal*, Forthcoming.
- Teece, D. J. 2010. Business models, business strategy and innovation. *Long Range Planning*, 43(2): 172-194.
- Teece, D. J. 2018. Business models and dynamic capabilities. *Long Range Planning*, 51(1): 40-49.
- Velu, C., & Stiles, P. 2013. Managing decision-making and cannibalization for parallel business models. *Long Range Planning*, 46(6): 443-458.
- Wang, A. X. 2018. Spotify's leadership is doubling down on an unprofitable strategy. *Quarz at Work*, <https://qz.com/work/1218831/spotify-is-doubling-down-on-an-unprofitable-strategy-as-it-prepares-to-go-public/>.
- Wernerfelt, B. 1984. A Resource-Based View of the Firm. *Strategic Management Journal*, 5(2): 171-180.
- Wohlsen, M. 2015. Amazon Prime is one of the most bizarre good business ideas ever. *Wired.com*, <https://www.wired.com/2015/02/amazon-prime-one-bizarre-good-business-ideas-ever/>.
- Ye, G., Priem, R. L., & Alshwer, A. A. 2012. Achieving demand-side synergy from strategic diversification: How combining mundane assets can leverage consumer utilities. *Organization Science*, 23(1): 207-224.
- Yin, R. 2008. *Case study research: Design and methods*: Sage Publications, Inc.
- Yurieff, K. 2018. Everything Amazon has added to Prime over the years. *CNN.com*, <https://money.cnn.com/2018/04/28/technology/amazon-prime-timeline/index.html>.

- Zott, C., & Amit, R. 2008. The fit between product market strategy and business model: implications for firm performance. *Strategic Management Journal*, 29(1): 1-26.
- Zott, C., & Amit, R. 2010. Business model design: an activity system perspective. *Long range planning*, 43(2): 216-226.
- Zott, C., Amit, R., & Massa, L. 2011. The business model: recent developments and future research. *Journal of Management*, 37(4): 1019-1042.