Digital Marketing Capabilities

by

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Digital Marketing Capabilities

Koç University

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This is to certify that I have examined this copy of a doctoral dissertation by

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Dedicated to my beloved family

ABSTRACT

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Developments and pervasiveness of IT-based digital technologies have altered customer expectations and escalated competition. To be able to address these changes in the market, numerous firms invest in digital marketing transformation. In this dissertation, I suggest that digital marketing capabilities (DMCs) are the key factors to succeed in an increasingly disruptive business environment. The first essay provides a thorough conceptualization of this construct through a multidisciplinary systematic literature review that combines insights from marketing, information systems, and strategic management disciplines. Building on resource-based theory and dynamic capabilities, I not only classify DMCs by capturing their hierarchical essence but also depict how they are related with one another. I also introduce and discuss several internal and external enablers that would regulate the link between DMCs and digital transformation. The second essay focuses on a specific DMC: *social media capability*. Building on Communication Accommodation Theory, the second essay empirically examines whether and how a brand's linguistic style used in social media impacts engagement when it joins another brand's social media conversation. In addition, I examine the influence of timing of posting social media content in driving engagement when joining social media conversations of other brands.

ÖZETÇE

Dijital Pazarlama Yeterlilikleri

Onur Osmanoğlu

İşletme, Doktora

28 Ağustos 2023

Bilgi işlem temelli dijital teknolojilerin gelişimi ve yaygınlığı müşteri beklentileri değiştirmekte ve rekabeti artırmaktadır. Pazardaki bu değişimlere cevap verebilmek amacıyla birçok firma dijital pazarlama dönüşümüne yatırım yapmaktadır. Bu tezde, dijital pazarlama yeterliliklerinin, giderek yıkıcı hale gelen iş ortamında başarılı olmak için kilit faktörler olduğunu öne sürmekteyim. İlk makale, pazarlama, bilgi sistemleri ve stratejik yönetim disiplinlerinden gelen içgörüleri birleştiren çok disiplinli bir sistematik literatür taraması yoluyla bu yapının kavramsallaştırmasını sunmaktadır. Kaynak temelli yaklaşım ve dinamik yeteneklere dayanarak, dijital pazarlama yeterliliklerini yalnızca hiyerarşik yapısını kapsayacak şekilde sınıflandırmıyor, aynı zamanda birbirleriyle nasıl ilişkili olduklarını da gösteriyorum. Ayrıca, dijital pazarlama yeterlilikleri ve dijital dönüşüm arasındaki bağlantıyı düzenleyecek birçok dahili ve harici etkinleştiriciyi tanıtıyor ve tartışıyorum. İkinci makale spesifik bir digital pazarlama yeterliliğine odaklanıyor: sosyal medya yeterliliği. İletişim Konaklama Teorisi'ni temel alan ikinci makale, bir markanın sosyal medyada kullandığı dil tarzonın, başka bir markanın sosyal medya sohbetine katıldığında etkileşime olan etkisini ampirik olarak inceliyor. Ayrıca, diğer markaların sosyal medya sohbetlerine katılımda sosyal medya içeriği yayınlama zamanlamasının etkisini de inceliyorum.

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TABLE OF CONTENTS

INDEX OF TABLES

LIST OF FIGURES

ABBREVIATIONS

AI	Artificial Intelligence
API	Application Programming Interface
CAT	Communication Accommodation Theory
CIO	Chief Information Officer
CMO	Chief Marketing Officer
DMCs	Digital Marketing Capabilities
IoT	Internet-of-Things
IS	Information Systems
IT	Information Technology
L&O	Learning and Orchestrating
LIWC	Linguistic Inquiry and Word Count
LSM	Linguistic Style Match
PRL	Proportional Reduction in Loss
RBT	Resource Based Theory

Chapter 1

1. INTRODUCTION

Digital transformation is defined as "a change in how a firm employs digital technologies, to develop a new digital business model that helps to create and appropriate more value for the firm" (Verhoef et al. 2021, p. 889). The term has become widely popular in recent years among firms operating in a range of industries (Wielgos et al. 2021) largely due to the changes in digital technologies and its impact on competition dynamics as well as consumer behavior (Verhoef et al. 2021). On the other hand, digital transformation efforts of many firms fail. A meta-analysis from practitioner-oriented studies reported between 2016 and 2020 estimates that the failure rate of digital transformation is 87.5% (Wade and Shan 2020).

Despite the importance of digital transformation for firms, limited research attempt exists regarding how firms effectively transform their businesses digitally (Warner and Wager 2019). In this dissertation, we argue that building *digital marketing capabilities* is the key success factor for firms to achieve this objective. In this dissertation, we provide a unifying effort to conceptually and empirically examine digital marketing capabilities and their impact on various business outcomes via two essays. Specifically, In the first essay (Chapter 2), we examine what digital marketing capabilities involve, how they are related to one another, and several internal and external factors that may influence the digital marketing capabilities – digital transformation link. From this perspective, the purpose of this essay is to address *what* question of digital marketing capabilities, advance understanding of the topic, and provide a roadmap for managers in their digital transformation journey.

In addition, advances in digital technologies and resultant hyperconnectivity have resulted in drastic changes in brand-to-consumer and brand-to-brand relationships (Swaminathan et al. 2020). To this end, managers attempt to capitalize on real-time interaction made possible by social media platforms (Gensler et al. 2013; Marchand et al. 2021). On the other hand, spending on social media advertising is expected to reach USD 207 billion in 2023[1]. This, in turn, gives rise to a communication clutter where firms need to create novel content to differentiate themselves from the others (Borah et al. 2020). As a result, brand-to-brand

[1] https://www.statista.com/outlook/dmo/digital-advertising/social-media-advertising/worldwide

communication on social media appears to be a popular real-time marketing activity in recent years (Zhou et al. 2022). From a social media capability perspective, in the second essay (Chapter 3), we investigate how firms may craft linguistically appropriate and timely social media content and its engagement outcomes. Specifically, we provide important insights into the role of linguistic characteristics and timing of social media content in enhancing engagement when a brand joins the social media conversation of another brand. This way, we attempt to address *how* question of digital marketing capabilities by examining and providing empirical evidence regarding the favorable business outcomes of digital marketing capabilities.

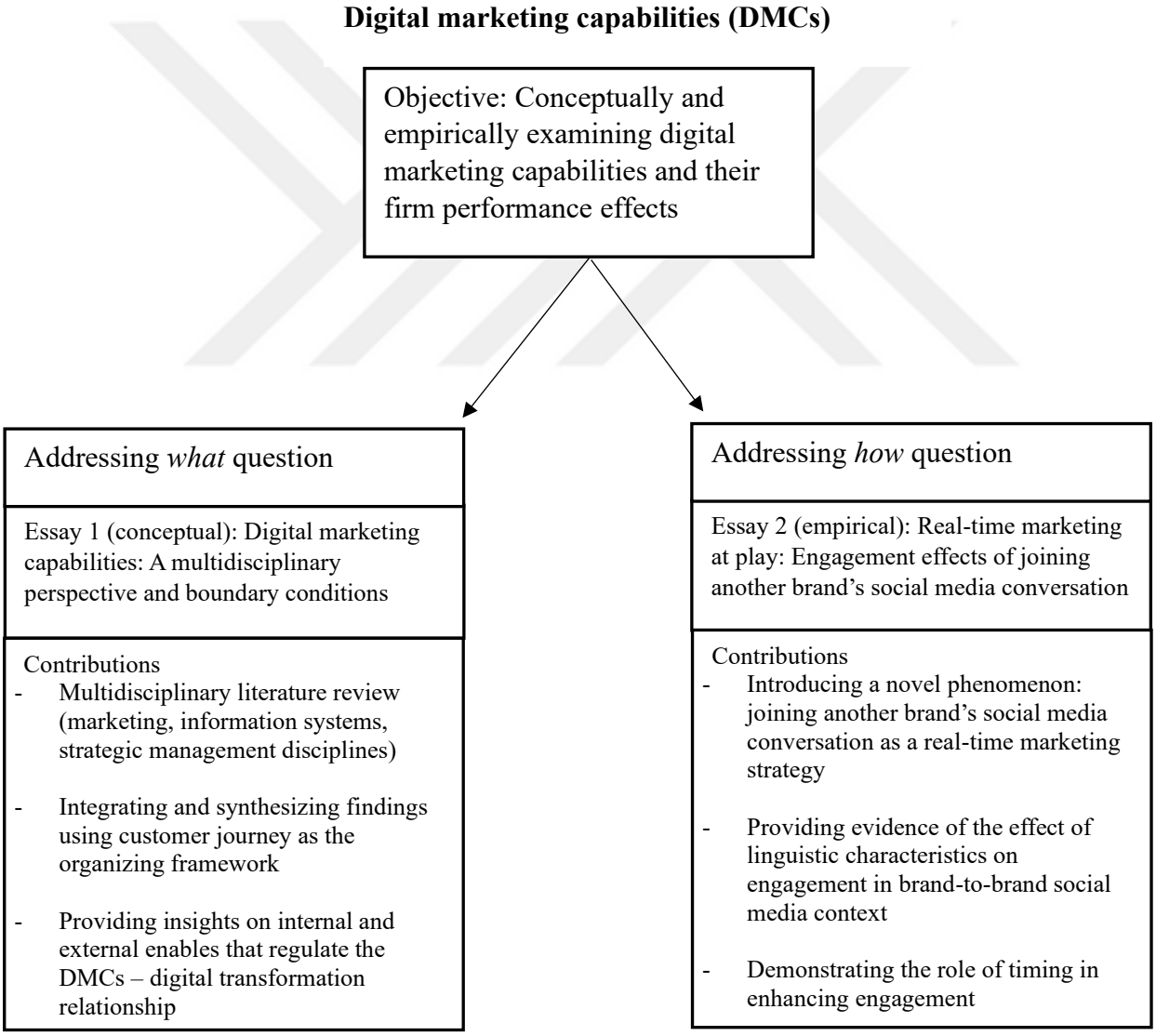

Figure 1: Overview of essays

1.1 Synopsis of Essay 1

In Essay 1, using customer journey as the organizing framework, this thesis provides a thorough conceptualization of digital marketing capabilities by integrating and synthesizing insights from marketing, information systems, and strategic management disciplines via a systematic literature review and depicting how firms with strong digital marketing capabilities can create customer value at each stage of the customer journey, and thus realize digital transformation. The essay also includes an investigation of various internal and external enablers that may influence this process. The contribution of Essay 1 to the marketing literature is threefold. First, research to date on digital marketing capabilities is largely fragmented where only one or few capabilities were focused on in isolation. Such a fragmentation also persists in studies that consider digital marketing capabilities as a group of related capabilities as they conceptualize the term only from the marketing perspective. In this study, we provide a more thorough conceptualization of digital marketing capabilities from a multidisciplinary perspective. Second, using customer journey as an organizing framework, we examine the role of digital marketing capabilities throughout all customer journey stages by capturing the interactive, non-linear essence of the digital marketing landscape (Kannan and Li 2017; Yadav et al. 2013). Third, we enhance our understanding regarding the digital marketing capabilities – digital transformation link by providing several understudied boundary conditions that may influence the functioning of these capabilities.

1.2 Synopsis of Essay 2

In the second essay, this dissertation focuses on a specific digital marketing capability: *social media capability*. Specifically, we consider real-time marketing, which is posting social media content in a way that reflects timely events or moments that receive attention on social media (Mazerant et al. 2021), an important form of social media capability. Using Twitter data, we empirically examine the role of linguistic style and timing of social media content on engagement when a brand joins another brand's social media conversation. We find that a brand's social media content that is linguistically similar to another brand drives engagement (i.e., number of quotes). In addition, joining social media conversation of another brand by posting content early enables the brand to achieve favorable engagement outcomes (i.e., retweets, likes, replies). In Chapter 3, we attempt to make three contributions to the marketing literature. First, we enhance understanding regarding a novel phenomenon by investigating the

impact of joining another brand's social media conversation as a real-time marketing strategy. Second, this study is one of the first attempts that provides insights into the impact of linguistic style match on engagement in a brand-to-brand social media communication context. Third, we find that taking part in another brand's social media conversation earlier enables the firm to enhance engagement levels, thereby advancing knowledge on the literature regarding the timing of social media content.

Chapter 2

2. DIGITAL MARKETING CAPABILITIES: A MULTIDISCIPLINARY PERSPECTIVE AND BOUNDARY CONDITIONS

2.1 Introduction

The marketing landscape has witnessed extensive changes in the past few decades due to developments in digital technologies (Malter and Rindfleisch 2019). From a firm perspective, the proliferation of technological advances has led to the emergence of new business models (Gatignon et al. 2017) and reshaped markets by eliminating barriers to entry and obscuring category frontiers (Neus et al. 2017). From a consumer perspective, advances in digital technologies have paved the way for the omnipresence of mobile devices and digital channels that provide consumers with a multitude of ways to interact not only with one another (Swaminathan et al. 2020; Verhoef et al. 2017), but also with firms along numerous touchpoints of the customer journey (Gill et al. 2017; Lemon and Verhoef 2016). Consumers expect experiences that are consistent and uncomplicated throughout these touchpoints (Kumar et al. 2021).

To counteract the moves of competitors, stay relevant to consumers, and offer superior customer experiences in a digital environment, many firms invest in digital transformation (Gurumurthy et al. 2021). However, a recent CMO survey indicates that more than 70% of firms reported that their digital marketing transformation progress was still at the nascent planning stage or at the emerging phase where digital components are not yet integrated, let alone institutionalized (The CMO Survey 2022). Extant marketing literature indicates that the extent to which a firm can follow such fast-changing environments may be contingent upon its marketing capabilities (Day 2011). In the digital context, firms should build *digital marketing capabilities* (*DMCs*) as classic, non-digital capabilities alone may not suffice to transform

digitally (Homburg and Wielgos 2022, Verhoef and Bijmolt 2019). Yet, the body of literature on DMCs to date is limited in several ways.

First, despite the central role of DMCs in achieving digital transformation, surprisingly, knowledge accumulation regarding DMCs is largely fragmented. Prior research mainly covered one or few capabilities in isolation (e.g., social media capabilities, Marchand et al. 2021), without incorporating them into a comprehensive set of capabilities needed for successful digital marketing (Homburg and Wielgos 2022). Only few studies investigate DMCs as a construct including an array of related components (e.g., Herhausen et al. 2020). Prior literature is also fragmented across disciplines (e.g., in marketing, conceptualizations of DMCs are largely based on prior marketing literature). Yet, Grewal et al. (2020) argued that marketing researchers need a multidisciplinary approach to "tackle the big challenges and opportunities that firms face when they try to harness the power of many new technologies" (p. 2). We incorporate information systems (IS) (Bharadwaj et al. 2013) and strategic management (Randhawa et al. 2018) literatures where digital capabilities have received ample attention.

Second, the digital marketing landscape changes fast and is highly interactive (Kannan and Li 2017), enabling consumers to interact with firms at different stages of their journey in a free, non-consecutive way (Yadav et al. 2013). Largely ignoring this, research to date has mainly studied DMCs within a specific stage of the customer journey. An integration of previous studies can serve to document the role of DMCs across the stages of the customer journey and provide actionable insights at different stages, enhancing our understanding of the overall customer journey from the perspective of DMCs.

Third, DMCs alone do not guarantee successful digital transformation and improved performance. Their success depends on various factors that are internal and external to the firm (Homburg and Wielgos 2022; Vial 2019). That such boundary conditions offering fine-grained insights into the effectiveness of DMCs in enabling firms to achieve digital transformation have not received much attention, constitutes a final gap in the literature.

In this article, we develop a more fine-grained conceptualization of DMCs and their contributions to digital transformation. We also present various enablers that facilitate digital transformation. We pursue three contributions (see Table 1). First, building on resource-based theory (RBT) and dynamic capabilities, we take stock of DMCs through a systematic literature review that incorporates insights from marketing, IS, and strategic management domains. Using the customer journey as organizing framework (see Fig. 1), we integrate and synthesize findings

on DMCs and provide a multidisciplinary conceptualization (Jaakkola 2020; MacInnis 2011). Second, we develop a conceptual framework that delineates how these DMCs help firms realize digital transformation by underlining the hierarchical essence of DMCs and their interrelationships (MacInnis 2011). Third, we provide detailed insights into how internal and external enablers regulate the impact of DMCs on digital transformation. Internal enablers include effective collaboration between CMO and CIO in achieving digital transformation, organizational readiness for digital transformation, and supporting IS capabilities. A key external enabler is environmental turbulence, which may help organize DMCs to rapidly engage in digital transformation attempts.

The remainder of this paper is organized as follows: in the next section, we discuss the methodology for a systematic literature review. We then provide our conceptualization of DMCs and explicate how it differs from prior work. Next, based on the literature review, we classify and discuss the role of each DMC in respective customer journey stages. We then provide our conceptual framework that depicts the link between DMCs and digital transformation and introduce several internal and external enablers that may influence the extent to which DMCs contribute to digital transformation. Finally, we derive theoretical and managerial implications, and a future research agenda for the study of DMCs.

Table 1 Studies on digital marketing capabilities

Authors	**Theory**	**Disciplinary Focus**	**Definition**	**Classification of DMCs**	**Boundary Conditions**
Herhausen et al. (2020)	Resource-based theory	Single (marketing)	"Ability of a B2B firm to perform a coordinated set of digital-related task (operational or dynamic), utilizing digital resources, for achieving a competitive advantage" (p. 277)	Based on four themes	N/A
Homburg and Wielgos (2022)	Resource-based theory	Single (marketing)	"A firm's ability to use digital technology-enabled processes to interact with customers and partners in a targeted, measurable, and integrated way to create new forms of value without regard for distance or time"	N/A	Market orientation Market environment
Wang (2020)	Dynamic capabilities	Single (marketing)	"Relational competencies that are required to leverage the benefits of digitalization" (p. 559)	N/A	Entrepreneurial orientation Firm size
THIS STUDY	Resource-based theory and dynamic capabilities	Multidisciplinary (marketing, information systems, strategic management)	*Processes, routines, and tasks that occur at different hierarchical orders and create value for customers and partners through digital technology-enabled processes by using and/or orchestrating digital resources and capabilities*	Based on five functional DMCs and three learning and orchestrating DMCs at the pre-purchase, purchase, and post-purchase stages.	CMO-CIO collaboration Organizational readiness Information systems capabilities Environmental turbulence

Note: "CMO-CIO collaboration" stands for chief marketing officer-chief information officer collaboration

2.2 Methodology

To identify the dimensions of DMCs, we conducted a systematic literature review by incorporating studies from marketing, IS, and strategic management. We were thus able to document previous work, thereby conceptualizing DMCs building on extant research (Palmatier et al. 2018). Our review involved 29 premier journals from marketing, IS, and strategic management disciplines in the EBSCO Business Source Ultimate, Web of Science, and Science Direct databases, using a combination of keywords with various Boolean operators and wildcards (see Table 2). Our review covered the time period between January 1, 1995, and April 30, 2021. We chose the starting date for our review as January 1, 1995 for two reasons: (1) there was limited knowledge regarding the Internet's role in marketing before 1995 (Hoffman and Novak 1996); (2) other authors (Yadav and Pavlou 2014) used the same starting date in papers with a multidisciplinary focus. As a result of this search process, we identified 4,490 articles. Elimination of duplicate publications reduced the number to 2,994 unique articles in total.

Next, we evaluated the remaining articles' eligibility for inclusion in our systematic literature review using the following criteria. First, we included both empirical and conceptual papers that focus on marketing capabilities in digital settings. Second, we included papers that investigate these capabilities with different units of analysis (i.e., individual, group/functional, organizational, and interorganizational). Third, we only selected papers that investigate capabilities from either a firm or employee/manager perspective and exclude those that investigate these capabilities from an individual consumer point of view.

Then, following Shamsollahi et al. (2021), we reviewed the abstracts of all included papers to assess their eligibility and categorize them into three groups: (i) "include", (ii) "exclude", and (iii) "maybe" (where further evaluation is needed). The "include" category contained 238 articles and the "maybe" category contained 379. Similar to Shamsollahi et al. (2021), one of the authors read the full text of the articles in the "include" and "maybe" categories to re-assess their suitability for inclusion. This process led us to reassign 38 articles from the "maybe" category to the "include" category, resulting in 276 eligible articles. We further added 61 articles that did not appear in EBSCO, Web of Science, and Science Direct databases, based on our previous readings (Watson et al. 2018) and manual searches using Google Scholar. The final sample included 337 articles of which 190 from marketing, 104 from IS, and 43 from strategic

Table 2 List of journals and keywords used in systematic literature review

Marketing	**Information Systems**	**Strategic Management**
Journal of Marketing, Journal of Marketing Research, Marketing Science, Journal of the Academy of Marketing Science, International Journal of Research in Marketing, Journal of Retailing, Industrial Marketing Management, Journal of Interactive Marketing, Journal of Service Research, Journal of Business Research	MIS Quarterly, Information Systems Research, Journal of Management Information Systems, Journal of Information Technology, Decision Support Systems, Information and Management, Journal of Strategic Information Systems, International Journal of Information Management	Management Science, Strategic Management Journal, Organization Science, Administrative Science Quarterly, Journal of Management, Academy of Management Journal, Academy of Management Review, Journal of Business Venturing, Research Policy, Organization Studies, Journal of Product Innovation Management

EBSCO & Web of Science	**Science Direct**
(Internet OR digital OR online OR web OR mobile OR electronic OR social media OR channel OR multichannel OR omnichannel OR database OR technolog*) AND (capability OR capabilities OR competence OR competences)	(“Internet” OR “digital” OR “online” OR “web” OR “mobile” OR “electronic” OR “social media” OR !channel) AND (“capability”). (“Internet” OR “digital” OR “online” OR “web” OR “mobile” OR “electronic” OR “social media” OR “technology”) AND (“capability”). (“Internet” OR “digital” OR “online” OR “web” OR “mobile” OR “electronic” OR “social media” OR “database”) AND (“capability”). We repeated this search by using “competence” instead of “capability” for each keyword combination. Note: We only used Science Direct database to search for papers published in IJRM due to the small number of publications present in EBSCO and Web of Science databases at the time of our paper search process.

management disciplines[2].

We coded the articles manually and reached inter-author agreement on differences in coding via discussion, in line with the extant literature (e.g., Khamitov et al. 2020; Shamsollahi et al. 2021; Wilson 2009). Again following prior work (e.g., Shamsollahi et al. 2021), an evaluator blind to this study coded a random sample of the included papers to corroborate the validity of our paper inclusion process. The same external evaluator also classified and coded the DMCs based on the guideline including the definitions of individual DMCs. Accordingly, the judge evaluated whether this set of papers should be included in the study, and if so, what capabilities these papers would fall into (Shamsollahi et al. 2021). The agreement between author and external evaluator was .85, which translates into .84 in terms of the proportional reduction in loss (PRL) for two judges with two categories (i.e., include and exclude) (Rust and Cooil 1994), exceeding the minimum .70 PRL required for exploratory studies (Rust and Cooil 1994; Shamsollahi et al. 2021).

2.3 Conceptualization of DMCs relative to extant literature

Marketing capabilities, defined as "the specialized, architectural, cross-functional, and dynamic processes by which marketing resources are acquired, combined, and transformed into value offerings for target market(s)" (Morgan 2012, p. 106), has received widespread research attention (for a review, see Morgan et al. 2018). However, existing literature regarding a set of marketing capabilities needed to exploit IT-based developments to create value in an increasingly complex digital environment remains limited. Only a few studies could be located on the topic (see Table 1)[3]. For example, Homburg and Wielgos (2022) investigate the impact of DMCs, vis-à-vis classic marketing capabilities, on firm profitability. The authors describe DMCs as "a firm's ability to use digital technology–enabled processes to interact with customers and partners in a targeted, measurable, and integrated way to create new forms of value without regard for distance or time" (Homburg and Wielgos 2022, p. 668). Herhausen et al. (2020) provide a systematic literature review on DMCs in a B2B context and pinpoint the

[2] The full list of the selected papers is available from the authors upon request.

[3] Although the study of Homburg and Wielgos (2022) is outside of the timespan of our review, we discuss the authors' DMC conceptualization given that it considers DMCs as a construct involving a set of marketing capabilities suitable for digital context. In addition, we did not include the work of Wang (2020) in our review since it was published in International Marketing Review, which is not one of the journals included in our review (see Table 2). Yet, similar to Homburg and Wielgos (2022), the author conceptualizes DMCs as a group of related capabilities. Thus, we also included this study in Table 1.

gaps in knowledge and practice regarding DMCs through manager interviews and surveys. The authors define DMCs as the "ability of a B2B firm to perform a coordinated set of digital-related task (operational or dynamic), utilizing digital resources, for achieving a competitive advantage" (Herhausen et al. 2020, p. 277, see Table 1).

We conceptualize DMCs by building on these definitions yet making some adjustments that reflect the findings from our systematic literature review (Cleeren et al. 2017). Similar to the hierarchical nature of classic marketing capabilities (Grant 1996; Morgan and Slotegraaf 2012), various types of DMCs occur in different hierarchical orders. Some of these DMCs are functional in nature and enable the firm to carry out various activities that have technological/analytical (i.e., internal) and customer/partner facing (i.e., external) focus. We call these capabilities *functional DMCs*. Another group of DMCs helps the firm learn about the changes in market conditions (e.g., competitive landscape, customer behavior) and orchestrate whether and how functional DMCs are used. We name such DMCs as *learning and orchestrating (L&O) DMCs*. In a way that incorporates this hierarchical and relational essence, we define DMCs as *the processes, routines, and tasks that occur at different hierarchical orders and create value for customers and partners through digital technology-enabled processes by using and/or orchestrating digital resources and capabilities*[4] (see Table 1).

RBT postulates that firms possessing resources that are valuable, rare, imperfectly imitable, and exploitable can achieve competitive advantage (Kozlenkova et al. 2014). In the digital landscape, many resources, such as cloud computing platforms and social media channels, are common to all firms (Herhausen et al. 2020). Yet, capabilities are rooted in the routines and tasks of the firm that are not imitable or tradable (Day 1994). This makes RBT a useful theoretical lens in explaining functional DMCs given its focus on operational capabilities (Schilke et al. 2018). Dynamic capabilities involve "difficult-to-replicate enterprise capabilities required to adapt to changing customer and technological opportunities" (Teece 2007, p. 1320) with a focus on "purposeful modifications of [the firm's] resource base" (Schilke et al. 2018, p. 392). Given rapid changes in the marketing landscape due to digital technologies (Verhoef et

[4] In defining digital marketing capabilities, we are also inspired by Morgan's (2012) marketing capabilities definition, which is *"the specialized, architectural, cross-functional, and dynamic processes by which marketing resources are acquired, combined, and transformed into value offerings for target market(s)"* (p. 106) as well as Morgan and Slotegraaf's (2012) marketing capabilities conceptualization involving various hierarchical orders and organizational levels.

al. 2021), the firm may need to shift its resources to create new and/or nurture existing DMCs. Thus, we employ dynamic capabilities perspective in explicating the L&O DMCs.

2.4 Dimensions of DMCs

Our systematic literature review documents five functional DMCs that have technological/analytical (i.e., digital technology capability, digital analytics capability) and customer/partner facing (i.e., social media capability, digital networking capability, e-service capability) focus. Research accumulation regarding DMCs also points out three L&O DMCs (i.e., digital customer orientation, digital channel management capability, digital marketing agility) that facilitate firms to organize functional DMCs based on real-time market insights.

Importantly, our classification of DMCs is similar to that of Nenonen et al. (2019) who categorize market shaping capabilities as those that create new links for resources (i.e., triggering capabilities) and that govern which of those capabilities are deployed and how (i.e., facilitating capabilities). Such hierarchical essence of DMCs that we portray is also akin to Morgan and Slotegraaf's (2012) intermediate- and higher-order B2B marketing capabilities. According to the authors, intermediate-order capabilities are those that combine numerous specialized, lower-order capabilities, and higher-order capabilities refer to those that involve learning-related processes encompassing lower- and intermediate-order capabilities and that entail modifying and reshaping resources and capabilities to be able to address marketplace alterations. In other words, our categorization of DMCs indicates that functional DMCs provide resources for L&O DMCs. Based on real-time market insights, L&O DMCs, in turn, decide whether and how functional DMCs are used, and reorganize resources required for novel and/or updated functional DMCs, if necessary.

We discuss the dimensions of DMCs in detail below starting with functional DMCs. In doing so, we employ the customer journey perspective that consists of pre-purchase, purchase, and post-purchase stages as the organizing framework (see Figure 2) (Lemon and Verhoef 2016)[5]. Pre-purchase stage involves the whole customer-firm interactions until the moment the customer makes the purchase (Lemon and Verhoef 2016). Purchase phase refers to the stage in

[5] Several conceptualizations exist regarding customer journey stages. For example, while some researchers consider this process in a way that is composed of four stages by including need recognition as a separate stage (e.g., Dowling et al. 2020), many others conceptualized it in terms of five stages (e.g., Grewal and Levy 2020). In line with previous research (e.g., Lemon and Verhoef 2016; Grewal and Roggeveen 2020), we use three-stage customer journey given that this perspective appears to be "more manageable" (Lemon and Verhoef 2016, p. 76).

which the customer makes a set of decisions regarding whether, when, and in what quantity to buy from the product or service from a particular firm (Dowling et al. 2020). Post-purchase stage involves a set of processes including the customer's evaluation of her consumption experience, sharing of her overall satisfaction with the product or service via (electronic) word of mouth, and engaging in repurchasing activities (Lemon and Verhoef 2016; Yadav et al. 2013). It is also important to note that customers can interact with firms in many ways and proceed along the customer journey stages in a repetitive and non-linear manner (Dowling et al. 2020; Lemon and Verhoef 2016; Yadav et al. 2013). Therefore, considering the role of DMCs throughout various stages of the customer journey, rather than viewing them as only one firm-customer interaction at a specific point in time, provides a more nuanced understanding of the topic.

2.4.1 Functional DMCs

Functional DMCs represent the capability set of a firm in deploying resources to undertake technological/analytical and customer/partner facing activities to achieve favorable business outcomes. Digital technologies, such as internet-of-things (IoT), artificial intelligence (AI), and CRM have become widely popular among scholars and practitioners (Kumar et al. 2021). We refer to the ability of the firm to deploy these technologies in order to obtain fine-grained consumer insights from a wide variety of sources and act on this information as *digital technology capability*. Such technological developments have resulted in colossal amount of unstructured data in various types including text, voice, image, and video (Balducci and Marinova 2018). The capacity to obtain and analyze these data to make informed decisions is important for digitally transformed firms, because the effectiveness of digital technologies entirely depends on data (Verhoef et al. 2021)[6]. We categorize this capability as *digital analytics capability*[7].

[6] In our definition of digital analytics capability, we are inspired by Verhoef et al.'s (2021) big data analytics capability definition, which is "the capability to acquire and analyze big data for decision making" (p. 893).
[7] In this study, we use digital analytics capability as an umbrella term that covers big data capability (Lin and Kunnathur 2019), big data analytics capability (Mikalef et al. 2019), business analytics capability (Krishnamoorthi and Mathew 2018), as well as business intelligence and analytics capability (Bozic and Dimovski 2019) given their conceptual similarities with one another, as observed in our literature review.

Customer journey stages

		Pre-purchase	Purchase	Post-purchase	Example
Learning and orchestrating digital marketing capabilities	Digital customer orientation	Network coordination on electronic marketplaces (Chakravarty et al. 2014)		Obtaining customer insights during their usage of product/service (Kopalle et al. 2020)	**Pre-purchase:** Amazon, Apple ecosystem coordination **Post-purchase**: L'Oréal ModiFace StyleMyHair and NYX Professional apps
	Digital channel management capability	Interacting with prospective customers (Bahar et al. 2021), providing customized recommendations (Reinartz et al. 2019)	Allowing customers to make purchases and track order status online (Zhu and Kraemer 2002), offering extra services in different channels (Reinartz et al. 2019)	Engaging in cross-selling activities using various channels (Cao and Li 2015), providing after-sales services (Xiao et al. 2019), integrating channels to ensure seamless customer experience (Hossain et al. 2020)	**Pre-purchase:** YouTube's "Up Next" panel **Purchase:** Warby Parker's in-store eye examination and prescription services **Post-purchase**: Singapore Airlines's partnership with DFASS and SATS
	Digital marketing agility	Sensing and responding marketplace changes using digital technologies (Verhoef et al. 2021)		Providing product/service customization based on understanding customers' latent needs via collecting and analyzing large amounts of data (Huang et al. 2021)	**Pre-purchase:** Adobe's website optimization to provide personalized visitor experience **Post-purchase:** Petrosea's gamification based mobile app to provide employee training
Functional digital marketing capabilities	Digital technology capability	Using AI technology to respond to in-store related questions (Huang and Rust 2021), predict lead qualification (Syam and Sharma 2018), reach sales to prospects to initiative the first contact (Davenport et al. 2020)	Using AI-based chatbots to process orders and payments for routine products (Syam and Sharma 2018), employing intelligent assistant to purchase items for customers (Kumar et al. 2021)	Using IoT technology to track and obtain product-related insights and offering proactive maintenance services (Suppatvech et al. 2019), engage in performance optimization remotely (Paiola and Gebauer 2020)	**Pre-purchase:** Macy's on call AI platform, Lexus's AI-powered "Feel Your Best" campaign **Purchase:** Ordering online groceries via Samsung Family Hub refrigerator **Post-purchase:** Tesla's Storm Watch feature for electric power optimization
	Digital analytics capability	Identifying potential customers (Sivarajah et al. 2020), engaging in real-time customer segmentation and targeting activities (Mikalef et al. 2020)		Obtaining in-depth insights regarding customers' current and future needs (Gupta and George 2016), engaging in innovation attempts using real-time consumption data	**Pre-purchase:** Nike's big data powered "category offense" strategy **Post-purchase:** Netflix's interactive movie Blackmirror: Bandersnatch
	Social media capability	Communicating with customers in novel ways (Borah et al. 2020), augment brand awareness and popularity (Li et al. 2021a)	Allowing customers to make purchases using social media (Li et al. 2021a)	Handling customer complaints (Ogilvie et al. 2018), pinpointing and preventing potential online firestorms (Herhausen et al. 2019), complementing CRM activities to enhance customer retention (Harrigan et al. 2020)	**Pre-purchase:** Oreo's "Power out? No problem. You can still dunk in the dark" tweet **Purchase:** Nordstrom's use of Buyable Pins on Pinterest **Post-purchase:** Starbucks's use of social media to obtain product-related feedback and join customers' social media conversations regarding the brand
	e-Service capability	Acquiring new customers via useful service information (Chuang and Lin 2017), providing training and consulting services to prospective customers using digital technologies		Forecasting potential breakdowns of all machines involved in an operation (Tronvoll et al. 2020), bolster resilience for turbulent environments (Rapaccini et al. 2020)	**Pre-purchase:** Telus's online tutorials on a range of industries **Post-purchase:** Audi's digital sales and services
	Digital networking capability	Engaging in product co-design with them (Basu and Bhaskaran 2018), forming alliances with other firms (Lee and Grewal 2004)	Co-designing with customers by incorporating their lived experiences (Ramaswamy and Ozcan 2016)	Providing customized offerings based on shared and combined customer insights that encourage repurchase (Rai and Tang 2014)	**Pre-purchase:** IKEA's co-creation attempt for its future office range **Purchase:** Nike By You co-creation service **Post-purchase:** Burberry's social retail store opened in partnership with Tencent

Figure 2 Organizing framework

In addition to technological/analytical-focused functional DMCs, extant literature in marketing, IS, and strategic management also concentrates on capabilities that enable firms to effectively engage in communication, service provision, as well as value (co)creation activities with customers and partners in various digital settings. We group this set of functional capabilities under the name of *customer/partner facing functional DMC*s, which is composed of social media capability, e-service capability, and digital networking capability. In this section, we integrate and synthesize knowledge accumulated in the extant literature regarding functional DMCs throughout various customer journey stages.

Functional DMCs at the pre-purchase stage Firms employ digital technologies in order to engage with customers in a highly personalized and efficient manner (Kumar et al. 2021). Regardless of its form (e.g., robot, virtual), AI can assist firms to execute regular, standardized functions in an automated way (i.e., mechanical AI), discover novel, undetected insights based on data (i.e., thinking AI), and engage in interaction with customers and/or inspect their feelings as well as emotions (i.e., feeling AI, Huang and Rust 2021). At the pre-purchase stage, numerous studies emphasize that AI capabilities enable firms to perform various important tasks including replying to customers' regular questions in-store (Huang and Rust 2021), spotting new customer segments (Burström et al. 2021), predicting lead qualification in a way that complements salespeople's competence (Syam and Sharma 2018), reaching out to sales prospects to make the first contact (Davenport et al. 2020), offering personalized marketing strategies based on consumers' tastes (Huang and Rust 2021), and acquiring new customers (Libai et al. 2020). To illustrate the use of AI at the pre-purchase stage, Macy's is currently testing Macy's on Call, which is an AI platform that provides customized answers to customers' responses regarding the availability of the item as well as its in-store location[8]. The look and feel of Lexus's AI based "Feel Your Best" ad campaign changes depending on consumers' emotional states observed by using facial recognition technology (Koltun 2021).

Data generated as a result of technological developments have propelled firms to engage in data analytics development to guide their decision making based on insights obtained through big data (Ciampi et al. 2021). According to a recent CMO survey, firms' data analytics investments increased by 40% compared to the last year, thereby constituting the most prevalent

[8] https://www.retaildive.com/ex/mobilecommercedaily/macys-ai-powered-shopping-assistant-underscores-mobiles-starring-role-in-retail.

investment among marketers (The CMO Survey 2022). At this stage of the customer journey, firms with data analytics capability may identify potential customers who are likely to have direct or indirect relation with the current customers by utilizing social network analysis and obtaining marketing insights (Sivarajah et al. 2020) as well as engaging in customer segmentation on a real time basis by aggregating and using various data sources and targeting these groups of customers (Mikalef et al. 2020). For example, Nike's ability to gather insights from big data has allowed the firm to segment markets based on sports instead of geography and enhance its sales over 70% since the initiation of this "category offense" strategy in 2008 (Marr 2016).

Apart from functional DMCs with technological/analytical focus, our literature review also documents a sizeable research output regarding customer/partner facing functional DMCs at the pre-purchase stage. Among these functional DMCs, social media capability has attracted the greatest research interest. This is because social media represent an important resource for firms to connect and interact with customers in ways that are not possible via traditional means (Li et al. 2021a). On the other hand, due to its highly unpredictable and dynamic nature, firms usually have less control over interactions on social media compared to traditional marketing venues (Hennig-Thurau et al. 2010). In this case, negative outcomes (e.g., online firestorms) are possible for firms that are not able to adapt and manage their interactions with customers on social media, thereby necessitating firms to develop strong social media capabilities (Marchand et al. 2021). Our literature review shows that, at the pre-purchase stage, firms use social media in a wide variety of customer facing related tasks, such as to obtain insights regarding potential customers' needs as well as preferences (Ohiomah et al. 2020), attract and acquire new customers (Malthouse et al. 2013; Michaelidou et al. 2011; Swani et al. 2017), and communicate with them in novel ways (e.g., improvised marketing intervention Borah et al. 2020) that enhance brand awareness and popularity (Li et al. 2021a). For example, Oreo's "Power out? No problem. You can still dunk in the dark" tweet due to the power outage in the 2013 Super Bowl has become viral in a short period of time (Borah et al. 2020).

Developments in digital technologies and the resultant change in consumer expectations have prompted firms to employ IT as well as electronic networks to achieve several objectives, such as enhancing the effectiveness and efficiency of firm-related processes, and augmenting competitiveness, thereby facilitating the transformation from goods- to services-focused economy (Rust and Kannan 2016). These occurrences have resulted in the creation of e-

services, described as "the provision of service over electronic networks, such as the Internet" (Rust 2001, p. 283)[9]. Although rather limited in number, research to date demonstrates that firms with robust e-service capability may acquire new customers by providing them with beneficial service information (Chuang and Lin 2017), engage in advance selling activities using web technologies (Shugan and Xie 2005), and provide education and consulting services to prospective customers using digital technologies (e.g., QRM-POLCA systems, see Coreynen et al. 2017). For example, the Canadian technology company TELUS delivers online tutorials as well as advice to customers on a wide variety of industries it operates including healthcare and agriculture (Morgan 2019).

Aside from a myriad of ways through which firms may build and maintain relationships with customers and create value for them, firms increasingly engage in value creation activities with their customers and partners in digital settings. Indeed, we identify papers that investigate firms' relationships with customers as well as with other firms in a digital landscape. Consistent with Verhoef et al. (2021), we refer to the ability of the firm to assemble and match various stakeholders and interact with them in a digital setting to create value as digital networking capability. In terms of firm-customer relationships, digital networking capability allows the firm to combine insights obtained from contacting both current clients as well as potential customers (Verona et al. 2006; Wong et al. 2016), and to engage in product co-design with customers (Basu and Bhaskaran 2018). For instance, by means of surveys and meetings, the Co-Create Community team of IKEA obtained insights from over 46,000 people consisting of customers and colleagues in designing its future office range (IKEA 2021).

Regarding digital interorganizational relationships, prior literature indicates that forming alliances with technology firms in a swift manner and leveraging this information accordingly may allow traditional retailers to achieve favorable firm performance outcomes (Lee and Grewal 2004). On the other hand, the length of such relationships may differ. While Yelp initially worked with OpenTable to allow its users to make restaurant reservations, this partnership ended shortly after the company acquired SeatMe, the competitor of OpenTable (Helfat and Raubitschek 2018). At this stage, extant research also demonstrates that firms with

[9] Various conceptualizations exist regarding e-service. Some studies consider e-service as customer service (De Ruyter et al. 2001), self-service and/or information service (for a review, see Rowley 2006), and digital servitization (Tronvoll et al. 2020). Additionally, Rust and Kannan (2003) claim that e-service is a comprehensive, customer-driven term that encompasses all interactions in the upstream and downstream channels including negotiation- and information-related transactions, and promotion flows. In parallel, we consider e-service from a broader spectrum that incorporates all these various perspectives.

limited digital networking capability may use external sources (e.g., network champions) to attain favorable business objectives, such as network coordination (Gupta et al. 2005, 2006; Herhausen et al. 2020).

Functional DMCs at the purchase stage Purchase stage, which is the most compact one among other phases in terms of time span, involves customer actions including choice, ordering, as well as payment for a specific product/service (Lemon and Verhoef 2016). This stage also includes the time that a customer must wait for the purchased product/service to be delivered (Dowling et al. 2020; Lee et al. 2018). At this stage, firms with functional DMCs can perform a range of tasks by employing digital technologies, such as using AI-based chatbots in sales processes to learn about customer needs and subsequently process orders and payment for routine, ordinary products (Syam and Sharma 2018) and intelligent assistants to engage in bot-to-bot transactions to purchase items for consumers (Kumar et al. 2021). For instance, Samsung Family Hub fridge allows customers to order groceries from such online retailers as Amazon Fresh, InstaCart, and Fresh Direct[10].

In addition, firms can interact with their customers through numerous (digital) touchpoints during their purchase decisions. One important touchpoint through which customers make purchases is social media platforms (Li et al. 2021a). Firms' effective use of social media via promotional offerings may allow them to extract transactional value in terms of customer purchases (Li et al. 2021a). For example, using Buyable Pins for some of its products, the fashion retailer Nordstrom enables customers to make purchases on Pinterest (Geyser 2020). From a firm-customer relationship perspective, firms can co-design products/services with customers via engagement platforms that combine customers' lived experiences as well as their imaginations (Ramaswamy and Özcan 2016, 2018). For instance, using Nike By You, customers can co-create shoe design with Nike and share these personalized products on social media platforms while they wait for their order to arrive (Ramaswamy and Özcan 2016). At this stage, firms can also engage in concerted efforts with their partners to create value in digital settings. To this end, digital networking capability may enable firms to achieve coordination with their supply chain partners regarding product delivery in a timely manner (Wu et al. 2006).

[10] https://www.samsung.com/us/support/answer/ANS00086664/

Such a supply chain coordination enables Amazon to deliver orders within the same day to its Prime customers residing in various cities[11].

Functional DMCs at the post-purchase stage Advances in digital technologies have resulted in the transformation of mundane, everyday items into smart products that are connected to one another, characterized under the concept of IoT (Ng and Wakenshaw 2017). IoT not only enhances the effectiveness and efficiency of the firm by allowing its employees to save time for more challenging tasks, but it also enables the firm to swiftly adapt to the changing market conditions to pursue new opportunities and avert threats (Langley et al. 2021). A wide variety of data obtained on a real-time basis through smart objects may serve as valuable inputs for firms to create new or enhance existing offerings (Ng and Wakenshaw 2017). Accordingly, both scholars and practitioners have predominantly focused on IoT capabilities at the post-purchase stage of the customer journey. A suitable example is proactive maintenance services provided by manufacturing firms with IoT capabilities where they can track and obtain product-related insights and act upon this information before a breakdown takes place (Suppatvech et al. 2019). Through its Cat® App, Caterpillar traces data regarding the field performance of its machines, which are connected with telematics and IoT technologies, for asset services (Tilliette et al. 2021). In addition, IoT capabilities facilitate firms to remote monitor their product, engage in performance optimization, and shift their business models to a service-oriented perspective (Paiola and Gebauer 2020; Suppatvech et al. 2019). For example, when a storm approaches a location, Tesla can remotely use Storm Watch feature of its software that charges the power unit of its customers' homes in order to provide power for a longer period of time when a storm hits their location and allows the systems to go back to the default setting when the storm is over (Tuerk 2019).

Contrary to IoT capabilities, which has mostly been studied at the post-purchase stage, AI capabilities have received scholarly attention at the post-purchase stage as much as at the pre-purchase stage. At this stage, AI capabilities may help firms provide customers with customized offerings and recommendations based on their interactions with customers as well as data collected from a wide variety of sources including transaction and rebate (Guha et al. 2021). Examining a broad array of variables, such as shopper data, individual customer preference, inventory levels, and price, Walmart's deep learning AI enables the firm to pinpoint and

[11] https://www.amazon.ca/gp/help/customer/display.html?ref_=hp_left_v4_sib&nodeId=GFUT24ALVAVC6VFD

recommend the next best available product that fits customers' tastes in case the demanded item is out of stock, and it enhanced the acceptance level of the recommended products to over 95% (Venkatesan 2021). Firms can also use AI in the customer development and retention phases of CRM (Libai et al. 2020). In this context, AI may play an important role to engage in customer churn prediction and pinpoint those who are likely to churn and enable the firm to take necessary actions to ensure they stay on board (Gordini and Veglio 2017).

Big data are considered to facilitate the growth of various digital technologies (e.g., IoT and AI, Huang and Rust 2021; Langley et al. 2021). In other words, by combining and integrating vast amount of data from these technologies, data analytics enable firms to obtain insights and achieve favorable business outcomes such as cost reduction, new product/service development, and enhanced profitability (Corte-Real et al. 2020; Huang and Rust 2017). At the post-purchase stage, data analytics capabilities help firms make decisions and act upon the information analyzed, all on a real time basis (De Luca et al. 2021). For example, following the announcement of a Californian fruit packing firm regarding the possibility of listeria contamination in stone fruits that are sold at numerous grocery retailers, Costco swiftly informed customers who purchased the potentially contaminated products using big data involving purchase records of its members (Bhasin 2014). Firms with data analytics capability can also obtain a solid understanding of the current and future needs of customers (Gupta and George 2016). In addition, this functional DMC may be instrumental in achieving innovations based on big data not only involving past customer activities (Erevelles et al. 2016) but also their real-time consumption. For example, Netflix's interactive film Black Mirror: Bandersnatch, which follows a script based on watchers' choices throughout the movie, allows the firm to gain detailed, unique understanding regarding customers' tastes real-time and could be used by the firm to decide what type of projects to be invested in (Damiani 2019).

Regarding functional DMCs with customer/partner facing focus, social media capability has received the greatest scholarly attention at the post-purchase stage. Social media capability may allow firms to engage in social listening and act on this information through new offerings (Li et al. 2021a). Furthermore, information obtained via social listening may also serve as important input for innovation (Muninger et al. 2019). Firms with strong social media capabilities may also identify and avert potential online firestorms, and if present, alleviate them from growing even further (Herhausen et al. 2019). At this stage of the customer journey, social media capability may help the firm carry out numerous tasks including engaging in after-sales

activities (Agnihotri et al. 2016), handling customer complaints (Ogilvie et al. 2018), and complementing CRM activities aimed at augmenting customer retention (i.e., social CRM, Harrigan et al. 2020; Trainor et al. 2014). It is also important to note that social media capability can be used in conjunction with e-service and digital networking contexts. For example, extant literature indicates that social media acts as a resource integrator in value co-creation with customers (Li et al. 2021a; Singaraju et al. 2016) and enables firms to address customer service requests (Bharadwaj et al. 2013). To illustrate, Starbucks not only responds to product-related feedback received from consumers on social media, but it also retweets some of social media posts, and joins social media conversations related to the brand (Chan 2023). This makes social media capability the most central functional DMC with customer facing nature.

In addition, e-service capability constitutes another functional DMC with a customer facing focus. While extant research emphasizes the important role of e-service capability in (digital) service innovation (e.g., Chuang and Lin 2015; Dotzel et al. 2013), a major context that underlines the important role of this capability is (digital) servitization which involves the firm's use of digital technology to realize a transformative shift from a product-oriented to service-oriented focus (Sklyar et al. 2019). In this case, obtaining e-service capability allows manufacturing firms to forecast potential breakdowns of equipment of not only the focal firm but also those of others involved in the operation (Tronvoll et al. 2020), effectively integrate various processes with several service network actors by reaching data regarding customers, product use, and market (Sjödin et al. 2016), and bolster resilience for turbulent environments that are difficult to predict (Rapaccini et al. 2020). For example, while Audi experienced an almost 8% decline in total sales compared to the approximately 15% decrease experienced in the overall industry due to COVID-19 pandemic in 2020, its sales in the last quarter of the same year was the highest in its history due to the resilience the firm built via the growth of digital sales as well as services (Audi 2021).

Developments in digital technologies, including the propagation of the Internet connectivity, have revamped the marketplace in a way that enables consumers to take part in value creation activities and thus makes them "a new source of competence" for firms (Prahalad and Ramaswamy 2000, p. 80). Firm-customer relationship perspective of digital networking capability has mainly been studied at the post-purchase stage. These papers largely posit that such a capability enables firms to engage in innovation processes either by co-creating with customers directly via interactions (Goyal et al. 2020) or indirectly through their experiences

(Ramaswamy and Özcan 2016). In the context of collaborative consumption, this capability enables each actor in the ecosystem (i.e., platform provider, peer service provider, customer) to support one another in combining their resources and co-creating value instead of only concentrating on its own returns (Benoit et al. 2017). A convenient example on this matter is the urban mobility firm moovel, which provides transportation credits to customers who purchase items from its member brick-and-mortar stores that they could redeem for using various public transport and other mobility services[12].

Resource dependence and RBT viewpoints suggest that firms may engage in partnerships with one another to benefit from complementary resources in a way that their combination creates rare and imperfectly imitable resources (Barringer and Harrison 2000). Indeed, interorganizational relationship perspective of digital networking capability underlines the importance of complementary capabilities in evaluating partnership potential, because both parties need to "focus on what they are best at" (Kamalaldin et al. 2020, p. 314). To this end, digital networking capability allows firms to effectively segment customers by sharing and combining market- and customer experience-related insights of their partners and thus engage in product/service customization that may encourage repurchase (Rai and Tang 2014). For example, the social retail store that Burberry opened in Shenzen, China, through partnership with Tencent allows the firms to provide customer experience on a personalized level where the clothes in the store have digital elements, such as QR codes, that customers could unlock using WeChat app (BBC 2020). Our literature review also documents that firms with strong digital networking capability coordinate business activities with their key customers as well as suppliers (Garcia-Dastugue and Lambert 2003). Furthermore, this capability helps the firm and its partners promptly address customer requests and market shifts.

2.4.2 Learning and orchestrating (L&O) DMCs

Having explicated what functional DMCs involve and how they help firms create value throughout various stages of the customer journey, we now turn to learning and orchestrating (L&O) DMCs. In essence, these capabilities determine if and how functional DMCs should be employed for a specific marketing task, and if needed, reorganize resources to create and/or hone these functional DMCs accordingly. As a result of our literature review, we identify three L&O DMCs, which are *digital customer orientation, digital channel management capability,*

[12] https://www.moovelus.com/solutions/retailers/

and *digital marketing agility*. We explain these capabilities with respect to each customer journey stage below.

L&O DMCs at the pre-purchase stage Achieving *c*ustomer orientation in the digital landscape is important for digitally transformed organizations as real-time data collected from customers via digital technologies may help them enhance their classic customer orientation (Kopalle et al. 2020). Importantly, while business landscape has been characterized by networks of an interconnected set of actors, wide adoption of digital technologies by firms has made the use of digital ecosystem as a value creation mechanism for digital customer orientation (Kopalle et al. 2020). At this stage, extant literature underlines the importance of an effective, well-balanced digital customer orientation for online platforms to acquire new customers (i.e., both buyers and sellers, Chakravarty et al. 2014). For example, such network coordination, along with other aspects such as data intelligence, has made firms like Google, Amazon, and Apple three of the most valued companies (Zeng 2018).

The Internet represents an important opportunity for firms to engage in value creation activities through new distribution channels in online settings in addition to their existing offline channels (Geyskens et al. 2002). The proliferation of channels also poses significant challenges for firms which operate through numerous channels, where consumers interact with them in multiple ways (Neslin et al. 2006) via a number of different touchpoints enabled by these channels (Verhoef et al. 2015; Lemon and Verhoef 2016). One may categorize the studies that investigate digital channel management capability into two large groups[13]. One group investigates this DMC on an individual channel basis rather than considering it as a multichannel-, omnichannel-, or platform-related construct. At the pre-purchase stage, this group of studies points to the facilitating role of firms' digital channel management capability in spotting new customers as well as distributors (Bianchi and Mathews 2016) and providing customers with in-depth product-related information (Zhu and Kraemer 2002) such as in the form of product reviews (Zhu 2004). This is important given that anecdotal evidence indicates that approximately 66% of consumers read up to ten reviews before purchasing a product/service (PowerReviews 2014). Another group of studies examines digital channel management capability in terms of multichannel, omnichannel, or platform viewpoints.

[13] In this research, we conceptualize digital channel capability as an overarching construct that includes internet/online channel (i.e., web, mobile) capability, multichannel capability, and omnichannel capability.

Accordingly, firms with this capability can successfully communicate with prospective customers (Bahar et al. 2021), engage in automated interactions with them (e.g., in-stock alerts), and provide them with customized recommendations (Reinartz et al. 2019). For example, YouTube recommends content in the "Up Next" panel consistent with what a specific user watches in that moment (Goodrow 2021).

An ever-increasing number of channels, massive amounts of customer data, as well as digital transformation attempts of firms have made agility an important term in marketing (Kalaignanam et al. 2021). Indeed, fast changes in the competitive landscape, digital technologies, and customer behavior have prompted firms to be digitally agile (Li et al. 2021b; Roberts and Grover 2012). We define digital marketing agility as the firm's capacity to rapidly sense and capture market opportunities using digital technologies (Sambamurthy et al. 2003; Verhoef et al. 2021). Agile marketing organizations are able to capitalize on creating and sharing a common understanding of sudden marketplace changes without departmental siloes, and rapidly gaining feedback on marketing actions through trial-and-error (Homburg et al. 2020; Kalaignanam et al. 2021). These, in turn, enable the firm to address market- and customer-related changes and to compete against rivals in this complex business environment (Chakravarty et al. 2013; Verhoef et al. 2021). For instance, Adobe optimizes its website, as well as its earned and paid media, in a way that provides personalized experiences to visitors by embracing "test, learn, and optimize" mantra (Lewnes 2021, p. 65).

L&O DMCs at the purchase stage Research accumulation regarding L&O DMCs at this stage appears to be rather limited compared to the pre-purchase and post-purchase stages. Extant research indicates that firms with digital channel management capability help customers make purchases and track order status online (Zhu and Kraemer 2002). From a multichannel/omnichannel perspective, allowing customers to purchase products/services online may provide an opportunity for firms to complement their existing capability base and achieve channel integration (Johnson and Bharadwaj 2005). Integrating online (web store) and offline (physical store) channels in a complementary manner may allow firms to underline the strengths of each channel (for online store, purchase; for offline store, customer support and showrooming) in creating value to customers (Reinartz et al. 2019). For example, in addition to selling eyeglasses both in online and offline modalities, Warby Parker offers extra services

that complements their offerings by providing eye exams as well as prescriptions in-store (Collins 2022).

L&O DMCs at the post-purchase stage According to Kopalle et al. (2020), digital customer orientation enables firms to digitally interact with their customers at the post-purchase stage of the customer journey while consuming the product/service. Such in-use information is of value only for a limited period of time; thus, conveying it swiftly with the digital ecosystem is important to create a high level of customer experience (Kopalle et al. 2020). For example, L'Oréal ModiFace's StyleMyHair and NYX Professional apps powered by AR allow consumers to try on new makeup types and hairstyles on a virtual environment and share this information with its partners such as Alibaba, Amazon, and Boots to ensure a high level of customer experience (L'Oréal 2018). From this standpoint, one may consider digital customer orientation a dynamic capability because of its responsive nature to real-time insights. Accordingly, this DMC may combine resources as a result of immediate feedback received from the customer's use of product/service in order to provide seamless customer experience. This could be done through the organization of various functional DMCs (e.g., digital technology [Kopalle et al. 2020]; digital networking capability [Chakravarty et al. 2014]).

We now turn to digital channel management capability. At this stage of the customer journey, this capability allows firms to address a range of tasks, such as promptly addressing customer demands (Kim et al. 2006) and providing new services to them (Gregory et al. 2019). Furthermore, using data pertaining to customer transactions as well as profile, firms may undertake predictive models in order to estimate customer churn, prevent it, and augment loyalty (Shankar et al. 2016). From a multichannel/omnichannel perspective, digital channel management capability allows firms to cultivate interactions with customers through various channels and offers an opportunity to engage in cross-selling (Cao and Li 2015), helps them provide customized offerings (Hossain et al. 2020) as well as more effective after-sales services (Xiao et al. 2019). Importantly, the integration of channels and its management necessitate providing high quality service throughout all the channels the firm serves, thus ensuring seamless customer experience (Hossain et al. 2020). In order to secure high level of customer experience throughout numerous touchpoints, the firm needs to harmonize many different functions (e.g., marketing, IT, logistics) and some of its partners (Lemon and Verhoef 2016). In this case, digital channel management capability may allow the firm to provide frictionless

customer experience by successfully integrating various functional DMCs (e.g., social media, e-service, digital technology, digital analytics) owned and controlled by the firm and its partners (i.e., digital networking). Singapore Airlines's partnership with the travel retailer DFASS and gateway services and food solutions firm SATS enables the firm to provide an omnichannel experience to customers by integrating several touchpoints involving on-board and in-terminal elements (Holzschuh 2018).

Finally, at the post-purchase stage, our literature review indicates that firms with digital marketing agility can perform a range of tasks, such as discovering customers' latent needs by collecting and analyzing customer data at large amounts and thus undertaking product/service customization (Huang et al. 2021) as well as new product development activities in a rapid manner (Homburg et al. 2020). Such new product development attempts may also take place by using insights from customers with varying roles (i.e., user, co-creator, resource, Roberts and Grover 2012). It is also important to note that, as an L&O DMC, digital marketing agility is a higher-order capability that occurs as a result of the combination of lower-order capabilities that are functional in nature (Lee et al. 2015). For this reason, firms need digital marketing agility that reorganizes various (digital) resources and capabilities to change how they perform business activities and thus achieve digital transformation (Verhoef et al. 2021). For example, digital analytics and digital technology capabilities (e.g., IoT) may be used for business process optimization tasks (Vial 2019). These capabilities, along with others (e.g., digital networking, Li et al. 2021b), constitute as important functional DMCs that provide resources for digital marketing agility. For example, as a result of developing AI-based digital technologies to be used in its Tabang plant to find copper, gold, lithium, and nickel, and developing a mobile app with gamification aspects to train its relatively less educated workers, the Indonesian mining firm Petrosea was able to enhance production while decreasing costs (McKinsey & Company 2020).

2.5 Conceptual framework and boundary conditions

In this section, we present our conceptual framework (see Fig. 2) that depicts functional and L&O DMCs, their interrelationships, as well as links to achieve digital transformation. It is important to note that while these DMCs are important to realize digital transformation, building and/or honing these capabilities alone may not be enough to fulfil this aim. In line with the extant research (Homburg and Wielgos 2022; Wade and Hulland 2004), we argue that the

extent to which a firm achieves digital transformation is contingent upon several internal and external enablers that may influence the DMCs - digital transformation link. Specifically, we examine three internal enablers (CMO-CIO collaboration, organizational readiness, IS capabilities) and one external enabler (environmental turbulence) that warrant future research attention.

Incorporating the hierarchical essence of marketing capabilities (Morgan and Slotegraaf 2012; Nenonen et al. 2019), we suggest that functional DMCs (e.g., social media, digital technology, digital analytics) provide the necessary means (e.g., reaching and interacting with customers, providing personalized offerings based on customer data) for L&O DMCs to develop an appropriate course of action regarding the changes in the market (e.g., digital channel management capability). L&O DMCs, in turn, enable the firm to address the customer- and market-related feedback by reorganizing functional DMCs (e.g., adding/removing touchpoints and integrating various channels; optimizing the most suitable channel configuration for the customer based on insights). These interaction dynamics are captured by the dashed arrows between the functional and L&O DMCs in Figure 2.

2.5.1 Internal enablers

In this subsection, we discuss CMO-CIO collaboration, organizational readiness, and IS capabilities as internal enablers that may function as boundary conditions that regulate the link between DMCs and digital transformation.

CMO-CIO collaboration A top management team (TMT) consists of a group of top-level executives who report to the CEO (Whitler et al. 2021). In this subsection, we focus on one specific member of TMT, chief marketing officer (CMO), whose role has been expanded significantly due to IT-based digital technologies. They are now expected to (i) gather insights that are data-driven, (ii) develop strategies as well as actions by considering all touchpoints, thereby reflecting the reality of the multichannel environment, and (iii) collaborate with other executives in the firm to engage in organizational change (Dahlström et al. 2014). Many firms consider CMOs, instead of CIOs, in charge of their digital transformation efforts, due to the centrality of providing remarkable customer experiences to marketing (Solis 2016).

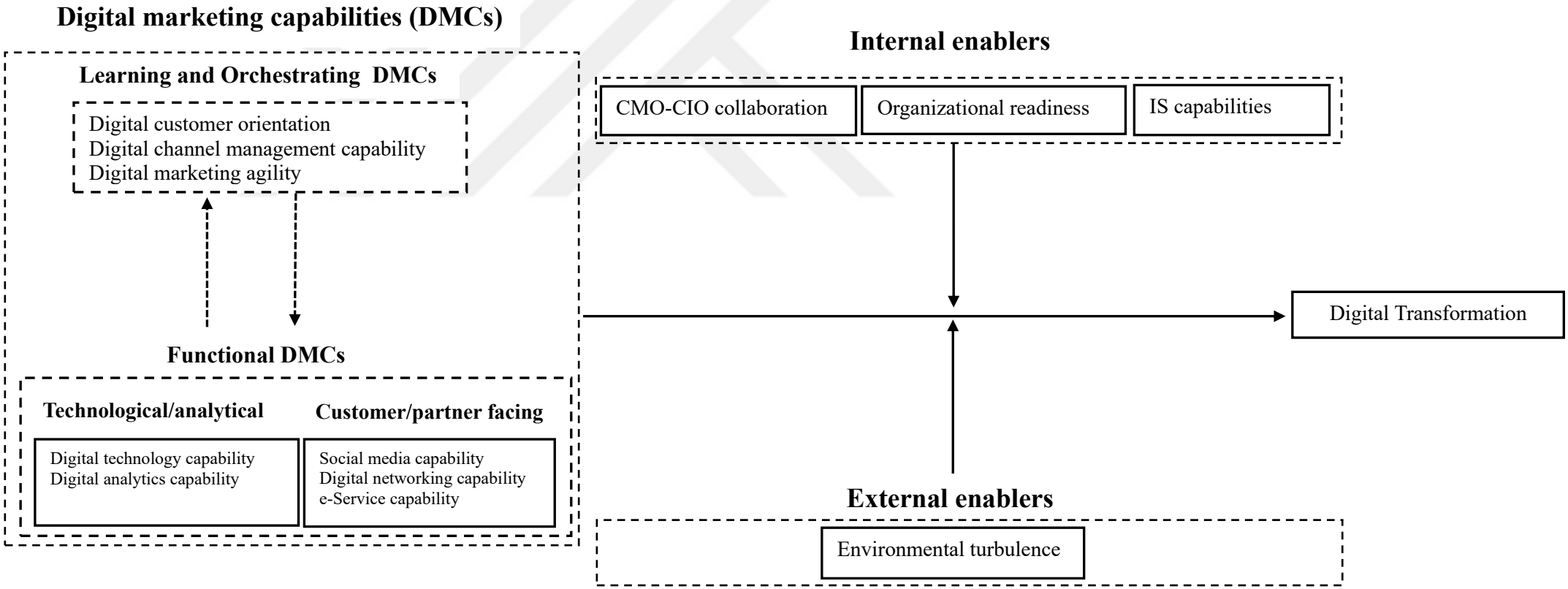

Figure 3 Conceptual framework

On the other hand, to achieve long lasting relationships with customers by providing them with a high level customer experience, CMOs and CIOs may need to collaborate since the use of complementary skills from the both sides is necessary to achieve this objective (Sleep and Hulland 2019). The need to collaborate becomes more relevant in the contemporary business landscape given that many customer-related tasks in a digital environment fall into the realms of marketing and IT functions where the CMO and CIO, respectively, have the decision making authority (Kalaignanam et al. 2021). Considering the major role of top executives in developing a firm's marketing capabilities (Whitler et al. 2021), achieving a high level of CMO-CIO collaboration may enable the firm to effectively assemble the resources that are segregated, yet required for the development and effective functioning of both functional and L&O DMCs, and thus enhance its likelihood to achieve digital transformation.

Although it is desirable for CMOs and CIOs to cooperate in a harmonious way, conflict between these two groups of executives may exist and negatively influence firm performance. Whitler et al. (2017) list four sources of conflict between CMOs and CIOs, which stems from the differences in (i) viewpoints regarding technology development (i.e., external, customer centric focus of CMOs vs. internal focus of CIOs), and use (i.e., firm orientation of CMOs vs. functional orientation of CIO; shorter time orientation of CMOs vs. longer time orientation of CIOs), (ii) technology goals (i.e., CIO's goal of execution of internal projects that reduces risk vs. CMO's goal of growing in a market oriented way without thinking of risks), (iii) technology accountability (i.e., both CMOs and CIOs are seldomly evaluated as accountable for their collaborative projects), and (iv) hierarchical structures (i.e., CMOs and CIOs may have different reporting relationships that might influence the power relationship between them).

According to Whitler et al. (2017), firms can settle these differences by aligning (i) viewpoints through regular meetings and functional arrangements to carry out short and long-term projects, (ii) goals that are set particularly and collaboratively, (iii) accountability using both particular and collaborative metrics, and (iv) hierarchical structure through organizing or reorganizing the reporting relationships at equal levels. Achieving alignment between the CMO and CIO should improve concerted relationships between these executives (Sleep and Hulland 2019). This may enable the firm to address issues at the pre-purchase (e.g., configuring systems in a market oriented way), purchase (e.g., rapidly addressing online platform breakdowns), and post-purchase stages (e.g., collecting customer data by protecting their privacy). This, in turn, should enhance the positive relationship between DMCs and digital transformation. However,

resolving one of the CMO-CIO differences and leaving the other considerations unresolved may result in conflicts at even greater levels (Whitler et al. 2017). Then, CMO-CIO disagreement should weaken the DMCs – digital transformation link. Accordingly, we make the following proposition:

P1: A high (vs. low) level of CMO-CIO collaboration strengthens (vs. weakens) the DMCs – digital transformation relationship.

Organizational readiness The responsibility of the CMO in leading digital transformation attempts as well as in ensuring harmonious collaboration with the CIO are necessary but not sufficient conditions for a firm to successfully realize digital transformation. This is because such a major organizational change goes well beyond these two important functions (Warner and Wager 2019). Instead, the whole organization needs to be ready for the digital transformation. Organizational readiness is defined as "the degree to which the organization and those involved are individually and collectively primed, motivated and capable of executing change" (Holt and Vardaman 2013, p. 9). The term has been studied in change management (e.g., Weiner 2009; Holt et al. 2010), digital innovations (e.g., Lokuge et al. 2019), and digital selling (e.g., Mullins and Agnihotri 2022) settings. In essence, for organizational readiness to take place, its members need to be collectively determined to fulfil a change (i.e., change commitment) and feel confident in their collective capacities to achieve this objective (i.e., change efficacy) (Weiner 2009). Over time, employees within an organization share similar beliefs and create mutual understanding of events surrounding the organization, thereby forming a collective evaluation regarding organizational readiness for change (Rafferty et al. 2013).

Importantly, building a suitable organizational structure that may help the firm successfully implement organizational change is an important topic. From a strategic management perspective, Reitzig and Maciejovsky (2015) find that as corporate hierarchy becomes steeper, information flow from mid-level managers to their superior decreases. Given that organizational readiness to change requires constant communication (Rafferty et al. 2013), this implies that the more vertical structure the business has, the less organizational ready it becomes. This, in turn, would decrease the likelihood that DMCs enable the firm to achieve digital transformation. On the other hand, extant literature posits that organizations with organic structure and decentralized strategic planning, which allows for a greater level of

communication, enhance employees' organizational readiness to change perceptions (Chonko et al. 2002). Thus, smaller, more flexible organizational structures (e.g., agile organizational design) should be more suitable for the firm to be ready for organizational change (Verhoef et al. 2021). Accordingly, we make the following proposition:

P2: A high (vs. low) level of organizational readiness strengthens (vs. weakens) the DMCs – digital transformation relationship.

Information systems capabilities Outcomes of IT-based developments, such as lower cost of computing, and connectivity on a global scale, have prompted firms to modify their infrastructures in line with these changes making the role of IT central to firm activities (Bharadwaj et al. 2013). Huang and Rust (2013) postulate that IT helps firms engage in service creation and provision by enabling acquisition of consumer information, allowing co-creation of value, constituting as the context, or being the service per se.

IT provides an important input for firms in creating new or improving existing marketing capabilities (Day 1994). From an RBT perspective, though, IT itself hardly constitutes a source of competitive advantage (Peppard and Ward 2004). Instead, the way these resources are *utilized* is likely to enable the firm to achieve competitive advantage (Wade and Hulland 2004). Utilization of IT resources is particularly relevant in rapidly changing environments where resources need to be deployed swiftly and dynamically (Sambamurthy et al. 2003). IS capabilities, defined as the capacity of the firm to organize and employ IT resources incorporated with other resources as well as capabilities (Bharadwaj 2000), may be helpful in the effective working of functional and L&O DMCs.

IS capabilities in relation with marketing capabilities have been studied in the extant literature. IS capabilities may help firms form long-lasting relationships not only with partners (Rai and Tang 2010) but also with customers (Wade and Hulland 2004); outperform competitors when combined with e-service capability (Huang and Rust 2017); and enhance knowledge ambidexterity by interacting with social media capability (Benitez et al. 2018). These findings illustrate the role of IS capabilities in enabling effective functional DMCs.

Firms may also benefit from strong IS capabilities in providing remarkable customer experience by allowing interactions and required functions throughout different channels (Van Brüggen et al. 2010). IS capabilities may allow firms to reach comprehensive information on a real-time basis that supports sensemaking in the face of rapid changes in the market (Lu and

Ramamurthy 2011). Through L&O DMCs (e.g., digital marketing agility), firms may use this information to reorganize functional DMCs to respond to the changes. Altogether, given the facilitative role of IS capabilities in enhancing the effectiveness of DMCs, we make the following proposition:

P3: IS capabilities strengthen the DMCs – digital transformation relationship.

2.5.2 External enablers

This subsection involves our discussion and proposition regarding the moderating role of environmental turbulence on the DMCs – digital transformation link by using the COVID-19 pandemic as a working example.

Environmental turbulence Environmental turbulence is defined as "the rate and unpredictability of changes in a firm's external environment" (Rego et al. 2022, p. 584). These changes in the customer, industry, and technology environments characterize the three aspects of environmental turbulence, namely market, competitive, and technological turbulence, respectively (Wilden and Gudergan 2015).

One aspect of environmental turbulence may influence the other aspects (Rego et al. 2022), making environmental turbulence a multifaceted construct. A suitable context for market turbulence is the COVID-19 pandemic (Rego et al. 2022). A CMO survey indicates that approximately 56% of firms reported to shift their marketing budgets towards business model transformation for marketing opportunities due to the pandemic (The CMO Survey 2020). In this case, the pandemic-related market turbulence is accompanied by competitive and technological turbulence. On the other hand, such unfavorable conditions may present some opportunities for firms not only in adopting new technologies and driving growth but also in proactively countering negative effects of environmental turbulence (Rego et al. 2022), thereby enhancing awareness, build trust, and achieving loyalty. Das et al. (2021) emphasize that pandemics may change customers' behavior vis-à-vis pre-pandemic period and enhance customers' e-commerce use, increase customers' new digital channel adoption, raise social media use, and amplify the need for marketing AI. Firms with strong L&O DMCs (e.g., digital channel management capability) may provide seamless customer experience by integrating various channels and touchpoints. For example, at the pre-purchase stage, firms may engage in interactions with customers on social media to signal availability as well as empathy. Via AI

chatbots, they can inform customers about the availability of a certain product/service, and with AI-related insights, can provide personalized offerings. During the purchase stage, firms may engage in automated ordering and purchasing options using digital technologies (e.g., IoT). At the post-purchase stage, contactless delivery and excellent after-sales services may be provided to customers.

Firms may also behave reactively by emphasizing resilience during environmental turbulence (Rego et al. 2022). To come up with an appropriate response, L&O DMCs may reorganize functional DMCs with respect to turbulence-related information and engage in learning activities (Morgan and Slotegraaf 2012). We suggest that this should include using and reorganizing functional DMCs, such as digital analytics capability and digital technology capability (e.g., AI), to anticipate environmental turbulence and act on it prior to others. For example, BlueDot, a software company specialized in outbreak intelligence, had detected the COVID-19 nine days earlier than World Health Organization announced its appearance (Stieg 2020). Accessing such information well in advance not only helps firms (and society at large) to be better prepared for large disruptions created by environmental turbulence but also to make plans moving forward and achieving competitive advantage (and to be better informed with enhanced well-being levels). In such conditions where the firm needs to avert the negative effects of environmental turbulence by foreseeing and preparing for turbulent environments, achieving resilience is more important than proactive approach (Rego et al. 2022). Accordingly, we make the following proposition:

P4: Stronger (vs. weaker) environmental turbulence strengthens (vs. weakens) the L&O DMCs – digital transformation relationship as long as the firm capitalizes on resilience.

2.6 Theoretical implications

In recent years, digital transformation has been considered a "strategic imperative on leadership agendas" (Warner and Wager 2019, p. 326). Despite the importance of DMCs in enabling firms to achieve digital transformation has been acknowledged in the extant literature (Homburg and Wielgos 2022), limited research exists regarding what DMCs are, how they help firms achieve digital transformation, and boundary conditions that may facilitate this process. Building on RBT and dynamic capabilities, we attempt to address this research gap and contribute to the literature on DMCs in three ways.

First, research to date that considers DMCs as a higher order construct involving a group of capabilities largely focuses on marketing domain (e.g., Herhausen et al. 2020; Homburg and Wielgos 2022), thereby providing a rather narrow conceptualization. We engage in a systematic literature review that consolidates findings from marketing, IS, and strategic management. We then integrate and synthesize the existing knowledge accumulation using customer journey as the organizing framework. Thus, we enhance understanding regarding DMCs through a multidisciplinary conceptualization.

Second, prior work has classified the dimensions of DMCs in a way that did not reflect their interrelationships. In this research, we classify two major groups of DMCs (i.e., functional and L&O). We present a conceptual framework that delineates how these DMCs are related to one another, thereby contributing to the marketing literature by demonstrating the architectural and interactive nature of DMCs.

Third, prior DMCs studies investigate some boundary conditions that focus on the DMCs – firm performance relationship (e.g., Homburg and Wielgos 2022; Wang 2020). In this research, we investigate the role of several internal and external enablers in regulating the DMCs – digital transformation relationship. In terms of internal enablers, we examine the role of achieving CMO – CIO collaboration in strengthening the link between DMCs and digital transformation. This way, we address the research call of Homburg and Wielgos (2022, p. 683) in examining the CMO's "potential coordination issues with other C-level executives (e.g., chief information officer)" in managing DMCs. In addition, we investigate the moderating role of organizational readiness by arguing that firms cannot achieve digital transformation if the organization is not readily committed to embrace this major change. Furthermore, DMCs need to be nurtured with supporting capabilities that may enhance their performance. To this end, we argue that IS capabilities bolster the DMCs – digital transformation relationship. Overall, the current research constitutes as the first attempt to examine the role of these internal enablers on the way DMCs operate.

Regarding environmental enablers, we examine the moderating role of environmental turbulence, which has received some initial research interest (i.e., environmental dynamism, see Homburg and Wielgos 2022). Using the COVID-19 pandemic as a working example, we argue that, depending on the severity of the environmental turbulence, firms can exert better DMC performance via either a proactive or reactive approach. This way, we enhance

understanding regarding the role of sudden shifts in the environment in strengthening the DMCs – digital transformation relationship.

2.7 Managerial implications

This study has several managerial implications. First, the current research claims that DMCs are important success factors for a firm to achieve digital transformation. From this perspective, our paper may provide guidance for managers who wish to reconsider their firms' existing capabilities and plan to invest in new ones to accommodate fast changes in the business environment. Specifically, the DMCs we identify through our literature review and map onto the customer journey stages may be considered a checklist for managers in gaining a complete understanding regarding the type of DMCs that would be useful at respective stages. In addition, the DMCs that reside in different hierarchical orders may provide insights for managers into how these capabilities are related with one another.

Second, one way to ensure a harmonious CMO-CIO collaboration may be the involvement of CEO in this relationship dynamic and her mandate to form a close working relationship. In line with the previous research (e.g., Whitler et al. 2017), engaging in joint projects may enable these executives to see one another's perspective. Indeed, firms should create cross-functional teams that consist of members from marketing and IT departments to ensure close collaboration and help build and maintain more intimate relationship between these two executives.

Third, organizational readiness requires buy-in from all parts of the organization. To this end, managers should communicate with employees about why and to what extent a change is needed (Armenakis et al. 1993) and provide necessary training to make sure that they are ready for change (Chonko et al. 2002). In addition, a major organizational change such as digital transformation requires an organizational structure that facilitates it. To this end, firms should make sure to create an optimal structural form in order to achieve digital transformation.

Fourth, similar to the viewpoint differences between CMO and CIO, variations in perspective may also occur between marketing and IT staff. This is probably due to the limited interdepartmental knowledge of the KPIs and other objectives (Luftman et al. 2017). Apart from cross-functional teams, firms should provide various trainings to personnel in these two functions about both department's objectives as well as important metrics. This way, firms can create a mutual understanding and reduce gaps in viewpoints and thus ensure stronger IS capabilities that contribute to the digital transformation attempts.

Fifth, we discuss that once an environmental disruption takes place, firms may rapidly learn about the environment through L&O DMCs and reorganize functional DMCs accordingly. The BlueDot example shows that firms can sometimes learn about a disruption such as the first signs of a pandemic even before the full-scale environmental turbulence takes place by using appropriate digital technologies. Since these unfavorable conditions may also present some opportunities for firms in adopting new technologies and driving growth (Rego et al. 2022), managers should take such turbulent environments as an opportunity and develop necessary DMCs to attain competitive advantage.

2.8 Future research agenda

In this section, we provide a future research agenda regarding the DMCs – digital transformation link.

CMO-CIO collaboration How does CMO-CIO collaboration influence the relationship between DMCs and digital transformation? An interesting avenue for future research is to investigate the role of the CEO in facilitating a harmonious CMO-CIO collaboration in a way that bolsters the DMCs – digital transformation link. In the context of social media strategies, extant research in CMO-CIO alignment demonstrates the impact of the CEO on this matter (Deans and Tretola 2018). Yet, the firm may exert an effort to realize digital transformation by attempting to build/renew various DMCs, thereby increasing the already existing viewpoint differences between CMO and CIO (e.g., customer data collection vs. cybersecurity). Does this relationship dynamic depend on the background (marketing vs. non-marketing) of the CEO? Extant literature indicates that the marketing background of CEO, combined with higher marketing department power, lowers the likelihood of myopic management (Srinivasan and Ramani 2019). In this case, does the CEO with marketing background influence the CMO-CIO collaboration in favor of market orientation perspective? Future research should also investigate if and how creating CMO-CIO collaboration-specific metrics on which these executives can be evaluated may influence the effective functioning of DMCs.

Organizational readiness Organizational readiness is one of the key considerations that influence the effectiveness of DMCs in realizing digital transformation. Accordingly, what role does organizational structure play in enabling the firm to implement this change? Earlier studies

on organizational structure indicates that the more customer-focused an organizational structure is, the more complex it becomes (Homburg et al. 2000). On the other hand, agile, flexible structures are recommended to achieve organizational change in the digital context (Verhoef et al. 2021). Therefore, future research should investigate how a firm can build an optimal organizational structure in a way that does not compromise its customer-focus yet provides enough flexibility to employees in implementing the digital transformation. In addition, given the importance of employee readiness in order to achieve organizational readiness for change (Rafferty et al. 2013), another research question worth pursuing is how firms can establish organizational processes and mechanisms that prompt employee readiness, thereby enhancing organizational readiness.

Information systems capabilities What are the IT/IS related factors that foster or impede the effective functioning of the L&O DMCs? For example, the firm with strong digital customer orientation can obtain insights from customers during their use of products/services and convey this information within its digital ecosystem (Kopalle et al. 2020). While the firm may be able to protect its customer data, it needs to make sure that its ecosystem partners would do the same. How does the firm's IS capabilities play a role in preventing data leakage? IT-business alignment literature indicates that both business and IT personnel may have limited knowledge of one another (Luftman et al. 2017), thereby creating coordination issues in achieving DMCs in a fully functioning manner. In addition, the priority of marketing employees regarding information collection and dissemination activities of the firm with ecosystem partners may not be consistent with the priorities of IT personnel. Research is needed on the ways firms enable marketing-IT alignment on this matter.

Environmental turbulence How can firms (re)configure their functional and L&O DMCs in the face of an environmental turbulence? For example, being inspired from the BlueDot's success in detecting the pandemic at an early stage by using AI, one may investigate how firms with strong L&O DMCs sense and respond such unexpected occurrences and organize functional DMCs (e.g., digital technology, digital analytics) accordingly. It also becomes important at what stage of the customer journey these capabilities would be more useful when dealing with such turbulent environments. A case study that investigates successful examples

may enhance understanding of the topic and provide a blueprint for managers to guide their efforts in reconfiguring DMCs during an environmental disruption.

2.9 Conclusion

In this research, drawing on both RBT and dynamic capabilities, we conceptualize DMCs through a multidisciplinary systematic literature review that combines insights from marketing, IS, and strategic management domains. As a result of an extensive literature review, we not only identify five functional and three L&O DMCs but also integrate and synthesize current knowledge on DMCs using customer journey as the organizing framework. We also develop a conceptual framework that involves how these DMCs are interrelated and discuss a set of boundary conditions that may regulate the DMCs – digital transformation relationship. We hope that the current study will encourage more research effort regarding DMCs.

Chapter 3

3. REAL-TIME MARKETING AT PLAY: ENGAGEMENT EFFECTS OF JOINING ANOTHER BRAND'S SOCIAL MEDIA CONVERSATION

3.1 Introduction

Social media represents one of the most important resources for brands to build and strengthen relationships with consumers (de Vries et al. 2012) and drive favorable performance outcomes including engagement as well as sales (Liadeli et al. 2023). A recent CMO survey indicates that the participating firms' social media spending is projected to be 26.4% in five years, exceeding the level of spending observed in June 2020 during COVID-19 lockdowns (The CMO Survey 2023). While social media allows brands to interact with consumers in novel ways (Li et al. 2021), it also creates content clutter (Willemsen et al. 2018). Thus, brands need to consider how to overcome communication clutter on social media (Borah et al. 2020) and address increasing levels of consumer scepticism towards marketers' motives (Zhou et al. 2022) to achieve intended results.

Extant research in marketing indicates that one such creative way to engage with customers is real-time marketing (Borah et al. 2020; Mazerant et al. 2021; Willemsen et al. 2018) where a brand posts social media content in a way that reflects timely events or moments that receive attention on social media (Mazerant et al. 2021). Real-time marketing may help brands enhance visibility and engagement by allowing them to join social media conversations (Willemsen et al. 2018). In this study, we focus on a specific form of real-time marketing, which is brand-to-brand communication on social media (Kerns 2014). Such a real-time marketing initiative provides the participating brand with three different engagement opportunities. First, the participating brand can interact with the brand that originally posted the content. For example, McDonald's became part of the social media conversation of Twitter by responding to its "hello literally everyone" tweet (original content, see Scenario 1 in Figure 4). Second, within the same thread, the brand can also respond to another brand's post. For instance, The North Face responded to the tweet of Starbucks, which replied to the original content posted by Twitter (see Scenario 2 in Figure 4). Third, it can reply to consumers' posts addressed to the participating

brand (see Scenario 3 in Figure 4), thereby enhancing engagement in both brand-to-brand (B2B) and brand-to-consumer settings (Kerns 2014).

In this case, how brands can join social media conversations of other brands by creating content in a way that enhances brand engagement becomes an important question. While prior work on firm-generated content has paid considerable attention to types of content a brand may post to bolster engagement (e.g., Borah et al. 2020; Meire et al. 2019; Tellis et al. 2019), how linguistic characteristics of such posts influence engagement appears to be understudied. Should the brand post content consistent with the linguistic style of another brand or is it better for the brand to communicate in a way that is linguistically different when it joins another brand's social media conversation? In this research, we suggest that a brand's linguistic style similarity with other brands may enable the brand to achieve enhanced engagement levels.

Studying the language style that a brand may use in responding to another brand's (or consumer's) post is important because it reveals subtle insights regarding social relations (Tausczik and Pennebaker 2010). Communication Accommodation Theory (Giles and Coupland 1991) indicates that people change their language style to harmonize with and adapt to others in an attempt to build a favorable image (Ireland and Pennebaker 2010). One such language change involves *linguistic style match (LSM)*, which is the degree to which a communicator uses function words (i.e., personal and impersonal pronouns, adverbs, auxiliary verbs, negations, prepositions, conjunctions, articles, quantifiers) similar to that of the other conversant (Ludwig et al. 2013). In this research, building on communication accommodation theory, we investigate the role of linguistic style matching between two brands in a social media conversation in driving brand engagement.

Apart from examining *how* brands may create content to join another brand's social media conversation and thus enhance engagement, *when* they should post these communication attempts is another important consideration that the extant literature in marketing has paid relatively little research attention. Specifically, we investigate whether and how the timing of joining another brand's social media conversation drives engagement. One of the central characteristics of social media is its real-time focus (Gensler et al. 2013). On the other hand, while research to date underscores the importance of timing of posting social media content in driving engagement (Kanuri et al. 2018; Willemsen et al. 2018), it has not been studied in brand-to-brand social media communication setting. Should the brand join another brand's social media conversation early or is the brand better off with a "wait and see" approach?

To address these research questions, we use Facebook's outage on October 4, 2021, as the empirical setting for this paper. Specifically, using Twitter API, we obtain the whole thread of Twitter's "hello literally everyone" post, to which many brands and users responded[14]. Considering different theoretical and behavioral underpinnings of engagement metrics emphasized in the extant literature (e.g., Buzeta et al. 2020; Muntinga et al. 2011; Swani and Labrecque 2020), we examine the role of linguistic characteristics and timing of social media content in driving various engagement outcomes such as retweets, likes, replies, and quotes. The results from negative binomial regression analyses indicate that the participating brand's social media content with similar linguistic characteristics to the other brand is positively related to the number of quotes. We also find that brand-to-brand social media content posted earlier (vs. later) enhances engagement levels in the form of retweets, likes, and replies.

The current paper's contributions to the marketing literature is threefold. First, we provide insights into a novel phenomenon by empirically examining the downstream consequences of joining another brand's social media conversation as a real-time marketing strategy. This way, we contribute to the bourgeoning research stream on brand-to-brand communication on social media. Second, the current research appears to be one of the first attempts that studies the impact of linguistic characteristics on brand engagement in a brand-to-brand context. Accordingly, we contribute to the literature on firm-generated content in documenting the positive engagement effect of linguistic similarity. Third, our study underscores that promptly posting content as a means to participate in a social media conversation of another brand translates to heightened engagement outcomes. This way, we enhance understanding of the topic and contribute to the literature on social media content timing (Kanuri et al. 2018).

The remainder of this paper is organized as follows. First, we provide theoretical background and hypotheses for the study. Second, we provide detailed insights into the methods in terms of research setting, data collection, as well as measurement. Third, we introduce the model and discuss the results. Finally, we conclude by providing general discussion, theoretical contributions, managerial implications, as well as limitations and future research directions.

[14] The logo and the name of Twitter were changed as "X" due to its recent acquisition by X Corp (Ivanova 2023). In this study, we use Twitter as the brand name since it was unchanged by the time we collected the data.

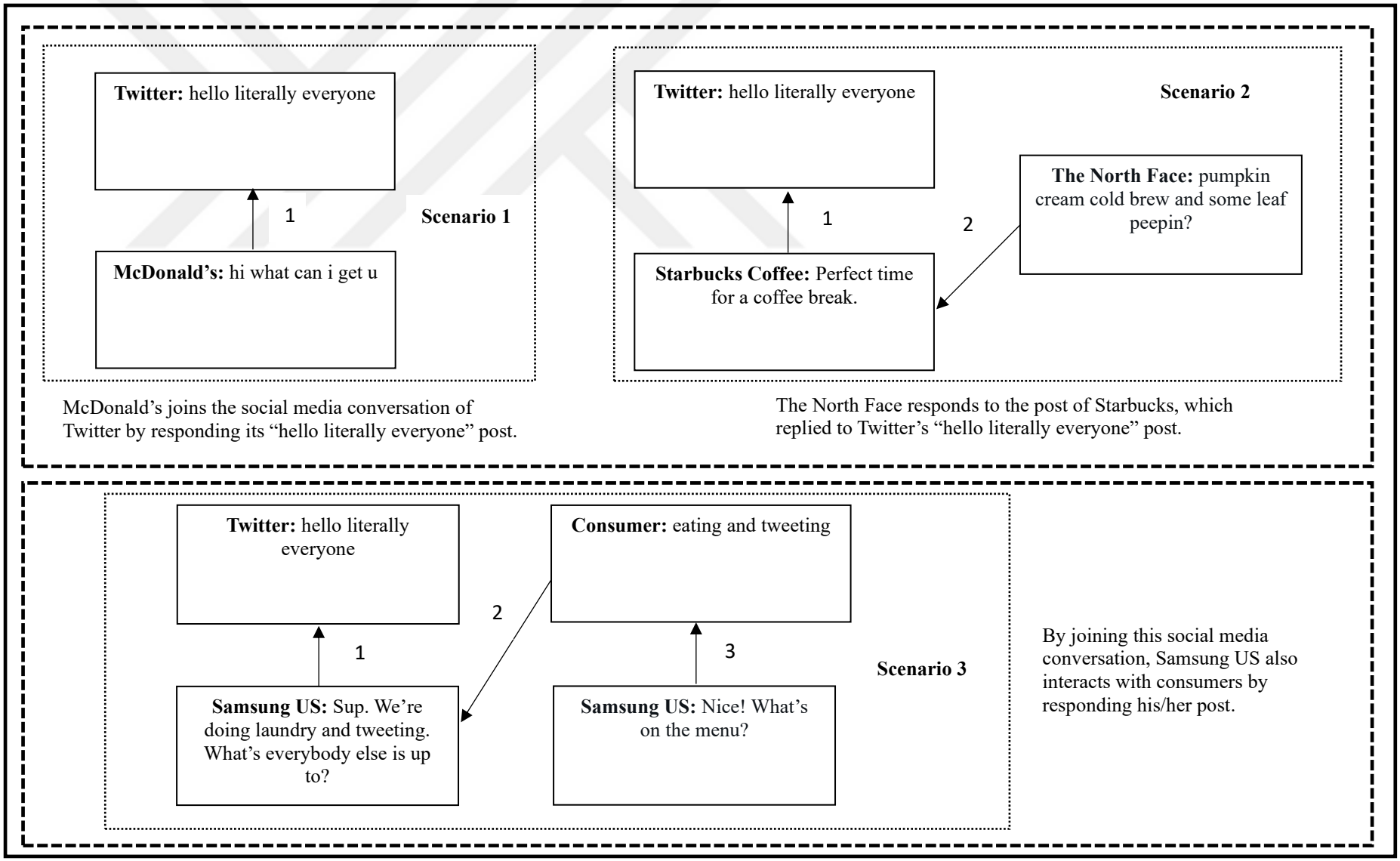

Figure 4 Illustrative example of business-to-business social media conversation

3.2 Theoretical Background and Hypotheses

3.2.1 Communication Accommodation Theory

Communication accommodation theory (CAT, Giles and Coupland 1991) posits that adapting to utterances as well as actions of others is one of the basic features of social interaction and an approach to understand and address the needs of interlocutors (van Pinxteren et al. 2022). According to this theory, the use of communication may serve as a way to indicate people's social distance with one another, and the process of altering communicative behavior represents accommodation (Giles and Ogay 2007). Regarding the concepts of accommodation, *convergence* is referred to as a strategy that people modify their utterances similar to the communicative behavior of their interlocutors for affiliation, similarity, as well as approval-seeking purposes (Soliz and Giles 2014). While *divergence* is a strategy that individuals employ to emphasize variation in patterns of speech, *maintenance* is the case in which parties maintain the use of their idiosyncratic communication behavior instead of converging to their interlocutors (Soliz and Giles 2014).

CAT suggests that communicators choose suitable linguistic strategies in order to build and/or cultivate relationships with other parties (Chang et al. 2019). In this case, convergence of linguistic style bolsters communication effectiveness among communicators given that conversational similarity has been associated with enhanced liking (Giles and Ogay 2007), trust, and shared social identity perceptions (Ludwig et al. 2013). On the other hand, divergence may be employed to highlight one's distinctiveness from the other communicator (Soliz and Giles 2014). Furthermore, one's desire to protect her own identity and authenticity appear to be important motives to employ maintenance as a linguistic strategy (Jakic et al. 2017).

Overall, CAT is an important theoretical lens that provides reasoning behind employing a communication strategy (i.e., convergence, divergence, maintenance), whereas LSM indicates that these strategies are generally verbal (Jakic et al. 2017). We explain LSM in detail and provide our hypothesis regarding its effect on engagement below.

3.2.2 Linguistic Style Match (LSM) and Engagement

Literature on mimicry indicates that language content represents *what* we write (Ireland and Pennebaker 2010). On the other hand, how to post such content is as important as what to post. Style words (i.e., function words) are composed of personal pronouns (e.g., I, she), impersonal pronouns (e.g., it, that), auxiliary verbs (e.g., am, are), articles (e.g., a, the), adverbs

(e.g., very, rarely), prepositions (e.g., in, from), negations (e.g., no, nothing), conjunctions (e.g., for, but), and quantifiers (e.g., some, many) (Gonzalez et al. 2010). LSM is defined as employing function words in a similar manner where high level of LSM between two people represents psychological synchrony (Ludwig et al. 2013) that evokes the feeling of similarity, acceptance, as well as trust among the parties (Herhausen et al. 2019). Such perceptions of similarity elicited by LSM may prompt people to perceive the other party more attractive (Meire et al. 2022). In addition, two communicators that use converging function words are likely to have similar knowledge and mutual understanding of a given topic (Romero et al. 2015).

In recent years, LSM has received an increasing scholarly attention. Research to date has studied the topic in various contexts including online customer reviews (e.g., Ludwig et al. 2013), online communities (e.g., Liu et al. 2022; Ludwig et al. 2014), and service failures (e.g., Herhausen et al. 2019, 2023). Regarding the impact of LSM on downstream consequences, LSM is found to be positively related to the enhanced conversion rate (Ludwig et al. 2013), and new product sales (Topaloglu and Dass 2021). Liu et al. (2022) find that the subsequent online post of users becomes more linguistically similar to the firm following feedback received from the firm. In addition, Herhausen et al. (2023) operationalize active listening via LSM and discover that active listening is positively related to gratitude. The reason of this situation is that active listening, which uses paraphrasing and repeating customers' use of language, may evoke affiliation perceptions (Herhausen et al. 2023).

In a social media context, Meire et al. (2022) demonstrate that a high level of LSM between a B2B firm and its followers is positively related with likes. On the other hand, the authors do not find a significant effect of LSM on the number of retweets and replies. This points out to the idiosyncratic differences of these engagement metrics. Specifically, consumers differ in their involvement levels to engage with a brand-generated or brand-related content (Chang et al. 2019; Muntinga et al. 2011). For instance, contribution represents an important form of consumers' online brand-related activities (i.e., COBRAs, see Muntinga et al. 2011) in which consumers like, comment, and/or share content created by other consumers or the brand itself (Buzeta et al. 2020). Accordingly, consumers may contribute to a social media content with likes, which constitute as the most popular yet the least strong engagement metric and contain the lowest level of involvement (Swani and Labrecque 2020). Chang et al. (2019) find that self-belonging and self-engagement are two important motives that lead to liking a brand-related content. Compared to liking, commenting on a social media post represents a greater degree of

engagement from users with high levels of involvement (Swani et al. 2017). Therefore, it not only symbolizes a greater level of connection between the sender and the receiver (Swani and Labrecque 2020), but it is also driven by consumers' self-presentation motives to comment on a social media post (Muntinga et al. 2011; Swani and Labrecque 2020).

Sharing a content on social media may take two forms. A consumer may share a social media content posted by others (e.g., brands, consumers) without providing any comments. Twitter's *retweet* option is an example for sharing. Alternatively, a consumer may share a social media post by including her own opinions on the content she disseminates (Swani and Labrecque 2020). For example, Twitter's "quote" option enables users to comment on a social media post that they share. Thus, one may consider quoting as a combination of commenting and sharing. From a general perspective, consumers who exert sharing behavior may be motivated to enhance their desired statuses and/or self-presentation perceived by others (Swani and Labrecque 2020).

Participating in the ongoing social media conversation of another brand presents a nuanced scenario that entails distinct yet interconnected dynamics. Existing studies on LSM indicate that a stronger alignment of linguistic styles between interacting parties tends to yield more favorable outcomes. In the context of social media, it is reasonable to anticipate that consumers who observe social media dialogues between two brands will view the brand that adopts a linguistic style akin to the other brand (i.e., high LSM) more positively. Specifically, the perceptions of similarity and trust that high level of LSM elicits (Herhausen et al. 2019) may enable consumers to perceive the brand's social media post more favorably, in parallel to the "signal-receiver connection" that liking or commenting on a brand's social media content may represent (Swani and Labrecque 2020). In this case, depending on the comments posted by others (de Vries et al. 2012), consumers who are highly involved with the brand may engage in commenting on a social media content that it posts. This is because the participating brand's use of a linguistic style similar to the other brand may lead to the perception of perspective taking by the focal brand (Romero et al. 2015). This should in turn elevate engagement levels for the participating brand above and beyond "likes". In addition, from an impression management perspective, individuals are motivated to talk about topics that provide them a common ground with others, thereby enhancing their self-presentation (Berger 2014). In this case, a brand's social media post that is linguistically similar to another brand may provide

consumers with a common and popular topic to talk about, leading them to share such content (i.e., retweets and quotes). Therefore, we make the following hypothesis:

H1: High (vs. low) level of LSM is positively associated with enhanced brand engagement.

3.2.3 Timing of Social Media Content and Engagement

The optimal order in which a brand joins another brand's social media conversation may be explained by primacy effect. Literature on primacy effect indicates that such an effect takes place if individuals are faced with two messages that are opposing to one another and develop a judgment in favor of the first message (Haugtvedt and Wegener 1994). Studies uncover that since limited competition exists among the items that are shown earlier, they may possess a memory advantage, thereby paving the way for the primacy effect (Murphy et al. 2006). In the context of commercials, prior research in marketing indicates that primacy effect maximizes recall (Li 2010; Pieters and Bijmolt 1997). In addition, from a learning perspective, repeated stimuli that are presented earlier lead to better learning than those that are shown later (Digirolamo and Hintzman 1997). Thus, one may argue that these instances imply a better learning and memory effect to take place for social media content posted earlier.

In addition, prior work on social media posits that a social media content becomes viral with a high growth rate (Kaplan and Haenlein 2011) and in a short period of time (Borah et al. 2020; Tellis et al. 2019). Considering the real-time essence of social media, the timing, or the suitable moment to engage in content posting to achieve favorable business results is of utmost importance (Kanuri et al. 2018; Willemsen et al. 2018). Indeed, research to date documents that social media content with a real-time focus enhances virality (Willemsen et al. 2018). This is because immediacy is an important characteristic of two main types of viral content, which are trending topics and buzzes (Jansen et al. 2021). This requires the brand to post its social media content early in order to take advantage of the ongoing discussion in real-time. Therefore, as both mere order and real-time marketing perspectives suggest, we argue that a brand enhances its engagement levels by posting social media content earlier (vs. later). Thus, we make the following hypothesis:

H2: The earlier (vs. later) a brand joins a social media conversation of another brand by posting a content, the greater its brand engagement outcomes.

3.3 Method

3.3.1 Research Setting and Data Collection

In this study, we use Facebook's (now Meta) outage as the empirical setting. On October 4, 2021, Facebook-affiliated platforms experienced an outage where users were unable to access their accounts for almost six hours (Taylor 2021). Anecdotal evidence indicates that this service failure resulted in almost $65 million loss for the company (Brown 2021). While this shows the severity of the incident, Facebook announced the problem on Twitter by emphasizing that some of its users had issues with accessing these platforms[15]. As a response, on a separate tweet, Twitter's post (i.e., hello literally everyone) has become one of the most liked tweets in 2021[16] (3.1 million), which received over 3.8 million retweets, likes, and quotes combined[17]. Importantly, many brands as well as users replied to this tweet, which amounted to 116,303 replies.

From a linguistic point of view, how to reply to such posts to enhance engagement is important. Twitter's post contains phatic communication (i.e., "hello"), which indicates a social function (Berger et al. 2020) that informs others about one's online social presence (Radovanovic and Ragnedda 2012). Apart from signaling presence, phatic expressions are used to invite others for communication (Humphreys and Wang 2018). In this case, linguistic style match may help brands not only signal availability but also enhance engagement through interactions in a coordinated manner (Ireland and Pennebaker 2010).

In order to test our hypotheses, we collected the entire thread (N = 116,303), which involves replies as well as numbers of likes, retweets, and quotes these tweets received by using Twitter API for Academic Research[18]. The data collected span the time period between October 4, 2021 at 17:28 (UTC) and September 3, 2022 at 15:57 (UTC). We also obtained brand- and consumer (i.e., user)-specific information, such as the number of followers the brand or user has, as well as the number of tweets posted by the brand or user at the time that the data were collected. After this step, we pre-processed the data for the text analysis. To this end, we followed the procedures in parallel to the extant research, such as removing non-English words as well as characters (e.g., URLs, Tirunillai and Tellis 2014), transforming lowercase letters and dummy

[15] https://twitter.com/Meta/status/1445061804636479493
[16] https://blog.twitter.com/en_us/topics/insights/2021/2021--onlyontwitter
[17] https://twitter.com/Twitter/status/1445078208190291973
[18] https://developer.twitter.com/en/products/twitter-api/academic-research

coding whether a tweet contains any multimedia elements (e.g., images, videos, GIFs, Meire et al. 2022). In order to capture the conversational dynamics on social media, we only kept the responses that a brand provided either to the tweet of another brand (or user) or joined the conversation containing at most two accounts. Furthermore, in parallel to the previous research (Liu 2020), we removed hashtags (i.e., #) from the data. In this study, we use tweets from brands with at least 5,000 followers. Our final dataset involves 1,703 tweets posted by 1,076 brands. While the brands in our dataset posted 1,257 tweets to respond to other brands, and they interacted with consumers with 446 tweets. 98.8% of data comes from the first 48 hours of Twitter's "hello literally everyone" tweet.

3.3.2 Measurement

Table 3 includes the descriptive statistics of the variables involved in the analyses. The dependent variables for this study are the number of retweets, likes, replies, and quotes that a brand's post received. In addition, using Linguistic Inquiry and Word Count (LIWC) program (Pennebaker et al. 2015), we obtain scores for nine function word categories of LSM. In order to capture the conversational dynamics among the actors, we calculate B2B and B2C LSM scores separately. Specifically, we obtain B2B LSM scores by calculating the linguistic similarity between the brand's response to the other brand's post, which can be the original post that starts the thread (i.e., Twitter's "hello literally everyone" tweet) or a response to the original post from a brand (e.g., "hi what can I get u" tweet from McDonald's), depending on which post the participating brand replies to (see Figure 4). In addition, we calculate B2C LSM scores by assessing the linguistic similarity between a brand's response (e.g., Samsung US's "Nice! What's on the menu" post) to the tweet of consumers targeted at the participating brand (e.g., consumer's "eating and tweeting" post) in terms of the use of function words (see Figure 4). More formally, we calculate the B2B and B2C LSM scores using the following equation:

$$LSM_{B2B,i,j} = 1 - \left(\frac{|(BrandFWi,j) - (BrandFWk,j)|}{(BrandFWi,j) + (BrandFWk,j) + 0.0001}\right)$$

$$LSM_{B2Ci,j} = 1 - \left(\frac{|(BrandFWi,j) - UserFWl,j|}{BrandFWi,j + UserFWl,j + 0.0001}\right) \quad (1)$$

where $LSM_{B2Bi,j}$ and $LSM_{B2Ci,j}$ stand for the B2B LSM and B2C LSM scores of tweet i in function word category j, respectively. $BrandFW_{i,j}$ and $BrandFW_{k,j}$ are the function word scores of the tweet i and tweet k in function word category j, respectively. Finally, $UserFWl,j$ represents the function word score of the user tweet l. Following this step, consistent with prior

work on LSM (e.g., Herhausen et al. 2023; Ireland and Pennebaker 2010; Meire et al. 2022), we took the mean of these values to obtain a composite LSM score, which ranges from 0 to 1, where 0 represents no match and 1 shows perfect match between tweets.

We operationalize the timing of social media content in terms of order of tweets by sorting them with respect to time in terms of second-to-second increments. This way, we are able to capture the order in which the tweets were posted. In addition, in line with the existing literature, we incorporate several post-, brand-, and time-related control variables to account for their influence on engagement metrics. Regarding post-related control variables, we include whether the brand's tweet includes multimedia elements (e.g., image, video, GIF, Meire et al. 2022). Additionally, we account for the tweet complexity by including word count and cognitive process scores obtained from LIWC (e.g., Kanuri et al. 2018; Ludwig et al. 2022). Using LIWC, we obtain the scores regarding the proportion of positive and negative emotion words used in tweets. In addition, we control for the number of followers of the brands as well as number of tweets posted by the brands upon the time that the data were collected to make sure we capture their effects. Furthermore, we incorporate the number of hours passed since Twitter's "hello literally everyone" tweet. Finally, we add industry dummies to control for industry-specific effects (see Table 3).

3.4 Model

The dependent variables used in the current research are count variables. For this reason, we analyze the data by means of negative binomal model rather than Poisson model given the overdispersion (Ludwig et al. 2022). Specifically, approximately 58% of the posts receive zero retweets, 48.7% prompts no replies, 12.8% do not have any likes, and 78.6% are never quoted, thereby showing overdispersion. Another reason that we use negative binomial regression is that this model relaxes the assumption that mean should be equal to variance (Dehdashti et al. 2022; Rietveld et al. 2020), which is not the case for our data (see Table 3). Our negative binomial model is specified as follows:

$$\ln(\lambda_{k,i}) = \alpha 0 + \alpha 1 \text{LSMB2Bi} + \alpha 2 ORDERi + \alpha 3 LSMi \; x \; ORDERi + \sum_{q=4}^{n} aqXi + \varepsilon i, \quad (2)$$

where $\lambda_{k,i}$ is the expected number of metric k (retweets, likes, replies, or comments) that the tweet i receives; $LSMB2Bi$ is the linguistic style match of the tweet i, $ORDERi$ is the order of the tweet i, and $LSMi \; x \; ORDERi$ is the interaction term. Additionally, Xi represents the matrix

Table 3 Descriptive statistics

	Variable	Description	Mean	SD	Min	Max
Dependent variable	Retweets	Number of retweets a post received	111.4703	1260.866	0	31229
	Likes	Number of likes a post received	2073.058	17987.41	0	408816
	Replies	Number of replies a post received	38.34762	718.0672	0	27692
	Quotes	Number of quotes a post received	43.38	1199.507	0	46337
Post predictors	LSM Score	The extent to which the focal brand's reply is linguistically similar to the other brand (user)	.6082845	.207844	.0000108	1
	Order of social media post	The order in which a brand posted the tweet	852	491.7581	1	1703
Post-related controls	Multimedia	Presence of multimedia elements (e.g., image, video, GIF) in a tweet	.1843805	.3879081	0	1
	Word count	Number of words included in a tweet	8.592484	8.800277	1	50
	Cognitive process	Cognitive process score from LIWC	7.954862	12.75566	0	100
	Positive emotion	Positive emotion score from LIWC	1.8265	7.623845	0	100
	Negative emotion	Negative emotion score from LIWC	.3597534	3.088782	0	100
Brand-related controls	Brand followers	Number of followers of a brand	588622.7	3700706	5010	62,800,000
	Brand tweets	Number of tweets the brand posted until the data was obtained	122951.6	594274.6	26	9085627
Time-related controls	Hour	Number of hours passed since Twitter's "hello literally everyone" tweet	14.48033	195.7073	1	7623
Industry controls	Industry	Ten industry dummies (1 = news and media; 2 = NGOs/universities/institutions; 3 = gaming; 4 = retail; 5 = software; 6 = service; 7 = restaurant; 8 = food; 9 = technology; 10 = others	--	--	--	--

of post-, brand-, industry-, and time-related controls. Furthermore, we include B2C LSM as a control variable. Finally, εi is the error term.

3.5 Results

The results from the negative binomial regressions for retweets, likes, replies, and quotes are shown in Tables 4, 5, 6, and 7, respectively. In each table, Model 1 represents the base model where we only include control variables into the model. Model 2 is the main effects model in which we add the predictors, namely LSM and order of tweet, into the base model. Model 3 is the full model where we also incorporate the interaction term ($LSMi\ x\ ORDERi$).

The full model shows different and nuanced results regarding the effect of LSM on different types of brand engagement. Specifically, we find evidence that posting content in a way that is linguistically similar to the other brand has a positive effect on number of quotes (α = 3.542, *SE* = 1.085, $p < .01$). Yet, although in the expected direction, the effect of LSM on retweets (α = .718, *SE* = .843 , $p > .1$) is not significant. These two results together indicate that a brand's social media content that is linguistically similar to another brand when it joins a social media conversation is a topic that consumers consider worth of sharing with their own comments instead of simply sharing it. In addition, the main effect of LSM on likes (α = -.477, *SE* = .644 , $p > .1$) as well as replies (α = .929, *SE* = .582 , $p > .1$) appear to be insignificant. Overall, these results suggest that H1 is partially supported.

On the other hand, we find stronger support regarding the main effect of order of tweet on several engagement metrics. Specifically, the results from our analyses indicate that joining a social media conversation of another brand earlier has a positive effect on retweets (α = -.001, *SE* = .0005, $p < .05$), likes (α = -.002, *SE* = .0003, $p < .01$), and replies (α = -.001, *SE* = .0004, $p < .05$). This means that consumers appreciate the early social media content posted by a brand when it joins a social media conversation of another brand. This manifests itself through retweets, likes, and replies. Yet, we do not find significant effect of the order of tweet on number of quotes although it is in the proposed direction (α = -.001, *SE* = .001, $p > .1$). Therefore, H2 is also partially supported.

Furthermore, while we do not formally hypothesize the moderation effect of the order of tweet on the relationship between LSM and engagement metrics, we find significant interaction effect on number of likes (α = .001, *SE* = .0005, $p < .05$) and marginally significant interaction effect on number of quotes (α = -.002, *SE* = .001, $p < .1$). However, the positive coefficient on

the interaction effect on likes seems counterintuitive to what one would expect. One possible explanation of this finding may be that while consumers appreciate that a brand joins another brand's social media conversation in a swift manner, they expect that the brand should take its time to post a linguistically similar content to its conversational partner.

It is also important to note that, as a central control variable, B2C LSM has a significant main effect on retweets (α = -2.989 , *SE* = .880, p <.01), likes (α = -3.492, *SE* = .677, p <.01), and replies (α = -1.357, *SE* = .606, p <.05) while the direction of this effect is negative. Considering that our dataset involves many consumer posts that reply to the participating brands' posts to complain about a certain aspect of brands, such as product/service quality (e.g., "Why does my Note 10 have worse cellular signal than the Honor 8 I replaced"), one plausible explanation of this finding may be that responding to consumers in a linguistically similar manner results in negative reactions in terms of engagement metrics (i.e., retweets, likes, replies). From this perspective, as the results show, while consumers appreciate brands' use of similar linguistic style in brand-to-brand social media conversations, they do not evaluate favorably when responses from brands follow a linguistic style similar to those of consumers. A more nuanced understanding regarding what causes such differences in engagement behaviors may be examined in future research.

In addition, to ensure the robustness of our findings, we perform sensitivity analysis. To this end, we repeat the analyses by keeping the tweets that were posted in the first 48 hours since Twitter's "hello literally everyone" tweet and dropping those that were communicated after this threshold. The results from the sensitivity analysis largely replicate the results (see Tables 8, 9, 10, and 11 in the Appendix). Specifically, we provide evidence regarding the significant effect of LSM on number of quotes (α =3.466 , *SE* = 1.092, p < .01). Yet, the impact of linguistically similar social media posts on retweets (α =. 858 , *SE* = .840, p >.1) and replies (α = -.120 , *SE* =.612 , p >.1) is not significant. On the other hand, we find marginally significant effect of LSM on replies (α =1.064, *SE* = .578, p <.1), which is not in line with the results from the main analysis.

Although the sensitivity analysis supports our findings regarding the main effect of the order of social media content on retweets (α = -.001, *SE* = .0006, p < .05) and likes (α = -.002, *SE* = .0004, p < .05), we observe an insignificant main effect on replies (α = -.001, *SE* = .0004, p >.1), which is different from our findings in the main analysis. Furthermore, although in the expected direction, the main effect of the order of tweet on number of quotes appears to

Table 4 Estimation results for retweets

	RETWEETS					
	Model 1: Control-only		**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	4.808***	.279	4.483***	.554	4.586***	.696
LSM			.876	.549	.718	.843
Order			-.0013***	.0002	-.001**	.0005
LSM x Order					.0002	.0008
Controls						
B2C LSM	-.870	.648	-2.811***	.508	-2.989***	.880
Multimedia	-.729**	.316	-.780***	.215	-.782***	.215
Word count	-.019	.020	-.013	.019	-.013	.019
Cognitive process	.005	.011	.024***	.009	.023***	.009
Positive emotion	.003	.011	.008	.016	.009	.016
Negative emotion	-.082*	.049	-.081**	.036	-.082**	.036
Brand followers/10000	.00006	.00005	.006***	.001	.006***	.001
Brand tweets/10000	-.0004	.0037	-.002*	.001	-.002*	.001
Hours	-.094***	.021	-.078***	.016	-.078***	.016
Industry	Yes		Yes		Yes	
Number of observations	1,703		1,703		1,703	
Log-likelihood	-4126.865		-3963.317		-3963.287	

***p<.01, **p < .05, *p < .1

Table 5 Estimation results for likes

LIKES						
Model 1: Control-only			**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	7.665***	.204	8.059***	.436	8.710	.540
LSM			.518	.427	-.477	.644
Order			-.002***	.0001	-.002***	.0003
LSM x Order					.001**	.0005
Controls						
B2C LSM	-3.571***	.228	-2.329***	.372	-3.492***	.677
Multimedia	-1.133***	.165	-.857***	163	-.899***	.164
Word count	-.072***	.009	-.040***	.014	-.041***	.014
Cognitive process	.030***	.007	.023***	.007	.023***	.007
Positive emotion	.042***	.013	-.005	.011	.002	.011
Negative emotion	-.083***	.020	-.068***	.018	-.071***	.018
Brand followers/10000	.006***	.0008	.006***	.001	.006***	.001
Brand tweets/10000	-.002***	.0008	-.002***	.001	-.002***	.001
Hours	-.005***	.001	-.004***	.001	-.004***	.001
Industry	Yes		Yes		Yes	
Number of observations	1,703		1,703		1,703	
Log-likelihood	-8818.522		-8756.570		-8754.446	

***p<.01, **p < .05, *p < .1

Table 6 Estimation results for replies

REPLIES						
Model 1: Control-only			**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	2.613***	.200	3.154***	.367	2.783***	.459
LSM			.343	.371	.929	.582
Order			-.001***	.0001	-.001**	.0004
LSM x Order					-.001	.001
Controls						
B2C LSM	-2.637***	.258	-1.970***	.382	-1.357**	.606
Multimedia	-.625***	.165	-.534***	.161	-.531***	.160
Word count	-.053***	.008	-.030***	.011	-.031***	.011
Cognitive process	.011*	.006	.012*	.006	.012**	.006
Positive emotion	.011	.012	-.012	.009	-.014	.009
Negative emotion	-.035	.022	-.033*	.019	-.032*	.019
Brand followers/10000	.008***	.0007	.007***	.001	.007***	.001
Brand tweets/10000	-.0003	.0009	-.0001	.001	-.0001	.001
Hours	-.002**	.001	-.001	.001	-.001	.001
Industry	Yes		Yes		Yes	
Number of observations	1,703		1,703		1,703	
Log-likelihood	-3929.217		-3877.970		-3877.144	

***p<.01, **p < .05, *p < .1

Table 7 Estimation results for quotes

QUOTES						
Model 1: Control-only			**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	4.682***	.363	2.816	.810	1.888**	.928
LSM			2.069***	.749	3.542***	1.085
Order			-.002***	.0003	-.001	.001
LSM x Order					-.002*	.001
Controls						
B2C LSM	-2.034***	.707	-1.175	.749	.401	1.129
Multimedia	-1.672***	.398	-1.085***	.303	-1.079***	.299
Word count	-.074***	.023	.002	.025	-.001	.025
Cognitive process	.012	.018	.036**	.015	.036**	.014
Positive emotion	.007	.016	-.020	.021	-.025	.020
Negative emotion	-.154*	.081	-.126**	.062	-.116*	.063
Brand followers/10000	.0002***	.0001	.006***	.001	.006***	.001
Brand tweets/10000	-.004*	.002	-.004*	.002	-.003*	.002
Hours	-.093***	.026	-.032	.022	-.039*	.023
Industry	Yes		Yes		Yes	
Number of observations	1,703		1,703		1,703	
Log-likelihood	-2204.033		-2121.069		-2119.491	

*** p<.01, ** p<.05, * p<.1

be insignificant (α = -.001, *SE* =.001, $p > .1$). Overall, the sensitivity analysis shows that our findings are largely robust.

3.6 General Discussion

The evolution of digital technologies and the widespread adoption of social media platforms have brought about a profound transformation in how brands engage with others in real-time (Hennig-Thurau et al. 2010). While this presents important marketing communication opportunities for brands (Lamberton and Stephen 2016), the challenge lies in breaking through the communication noise and standing out from competitors (Borah et al. 2020; Pieters et al. 2002). In response, brand-to-brand communication on social media has emerged as an increasingly prevalent form of such real-time marketing efforts (Kerns 2014; Zhou et al. 2022). The current research sheds important light on the role of linguistic characteristics and timing of social media content in driving engagement while joining social media conversations of other brands.

3.6.1 Theoretical Contributions

This paper makes several contributions to the marketing literature. First, our work contributes to the nascent stream of research regarding brand-to-brand communication on social media. Existing work on this topic has investigated such communication attempts in the form of brand praise (Zhou et al. 2022). We extend this research stream by focusing on how brands can drive engagement via joining other brands' social media conversations as a form of real-time marketing strategy.

Second, we contribute to the literature pertaining to linguistic styles (e.g., Ludwig et al. 2013, 2014; Villarroel-Ordenes et al. 2019). The current research is one of the first that examines the effect of linguistic characteristics on brand engagement from a B2B perspective. Specifically, we enhance understanding of this important topic by providing evidence of the positive effect of linguistic style similarity on number of quotes, which is an understudied metric in this context. While simply sharing a social media content is a reflexive and passive behavior, engaging in sharing content by providing comments (quotes) represents a reflective activity in which a greater amount of cognitive resource is needed (Swani and Labrecque 2020). From this perspective, we provide a nuanced view of consumers' active sharing behavior of brand-generated social media posts.

Third, this study contributes to the social media marketing literature by investigating the appropriate timing to engage in content posting in order to drive favorable outcomes (Kanuri et al. 2018; Willemsen et al. 2018). One important characteristics of social media platforms is that it is based on real-time (Hennig-Thurau et al. 2010). Therefore, the results from our study suggest that the earlier a brand joins another brand's social media conversation by posting content, the greater engagement it achieves (i.e., retweets, likes, and replies) instead of responding later than others, thereby providing evidence for the primacy effect in a brand-to-brand social media communication setting.

3.6.2 Managerial Implications

The current research offers numerous implications for managers. Real-time marketing offers important opportunities for brands to drive customer engagement through well-crafted and timely social media content. This research indicates that brand-to-brand communication is one of them. As our findings indicate, one important implication for marketing managers is to build social media content linguistically similar to the other brand when joining a social media conversation of that brand. Specifically, we find that a high level of LSM positively influences engagement (number of quotes). As aforementioned, a plausible explanation of this finding may be that highly accommodative linguistic style may be perceived by consumers may provide a popular topic that serves as a common ground to talk about as this may enable them to "look better" (Berger 2014, p. 591). Such self-serving behavior may lead consumers to quote the brand-generated content that allows them to simultaneously share and comment on the post (Swani and Labrecque 2020). Thus, to benefit from these perceptions, we urge managers to post social media content linguistically accommodative to other brands when joining social media conversations.

In addition, extant research in marketing posits that timeliness is an important factor for social media content to achieve virality (Borah et al. 2020; Willemsen et al. 2018). Given that such posts achieve virality in a small period of time, taking part of these conversations may enable the firm to increase social media performance. In line with this reasoning, our study finds that joining social media conversations earlier may help the firm drive engagement (i.e., retweets, likes, replies). This requires the brand to engage in social listening of conversations on social media regarding timely events (Schweidel and Moe 2014; Swaminathan et al. 2020) and develop capabilities to act in an agile, nimble manner to be able to respond to these

conversations. To this end, we recommend managers to provide necessary training for its marketing team to be able to sense and respond such social media conversations (Kalaignanam et al. 2021).

3.6.3 Limitations and Future Research

The current research has several limitations. First, while we enhance understanding regarding the linguistic characteristics of brand-to-brand social media posts by uncovering the positive impact of LSM on number of quotes, this represents only one of the engagement metrics. One reason for finding insignificant main effect of LSM on retweets, replies, and likes may be due to the small sample size. Indeed, we only use a small subset of the dataset by (i) selecting the brands with at least 5,000 followers, and (ii) selecting cases where the social media conversations involve at most two accounts. Thus, future research that involves a higher sample size may provide a clearer picture regarding the main effect of LSM on these engagement metrics.

Second, in line with previous work on social media (e.g., Borah et al. 2020), we only use one social media platform (Twitter) to investigate the proposed relationships. On the one hand, joining another brand's social media conversation from a brand-to-brand perspective is a novel phenomenon. From this perspective, while establishing engagement effects of LSM and timing of social media content is an important contribution, future research may investigate this relationship using another social media platform (e.g., Facebook, Threads).

Third, the empirical setting we investigate represents a unique context where many brands indicated their presence given the outage of Facebook, Instagram, and WhatsApp. Therefore, one may claim that the participating brands may have joined the conversation strategically, thereby presenting a potential self-selection bias. While we control for many factors including the number of followers and tweets per brand, as well as the industry in which a brand operates, future research should investigate and test whether there are systematic differences in the type of brands that choose to participate and whether certain types of brands choose to participate early or later. More sophisticated models that fully address potential endogeneity and self-selection issues that may be present are needed.

Fourth, in the current research, we assume that the effects of LSM and order of tweets is uniform across brands. However, different brands may benefit differently from LSM. For example, two brands with the same LSM scores may have different levels of engagement

outcomes. Therefore, an avenue for future research may be to investigate the role of linguistic similarity and timing of social media posts in driving engagement considering heterogeneity across brands.

Similarly, we assume LSM and order effects on engagement to be linear. However, these effects may exhibit non-linearities. For instance, posting a social media content in a way that is slightly late (vs. too early or too late) may enable the brand to achieve greater engagement effects. Therefore, future research that sheds light into the possible non-linearities by estimating a model with more flexible parametric relationships is needed.

Finally, our findings indicate that a brand's social media post that is linguistically similar to another brand's content drives engagement in the form of number of quotes. Yet, brands have traditionally been advised to project their distinct identities through their marketing communications (Batra and Keller 2016; Madhavaram et al. 2005) and stay true to their unique identities. An interesting avenue for future research may be to investigate to what extent brands should converge (diverge) from their own identities in such brand-to-brand communications to enhance engagement.

Chapter 4

CONCLUSION

The current dissertation makes a number of contributions to both marketing theory as well as practice (see Figure 5). From a theoretical perspective, Chapter 2 appears to be one of the first that attempts to address how firms can use DMCs to achieve digital transformation. Specifically, I provide a broader conceptualization of DMCs via a multidisciplinary systematic literature review. In addition, I integrate and synthesize findings using customer journey as the organizing framework that depicts the ways in which firms employ DMCs in pre-purchase, purchase, and post-purchase stages. I also introduce and discuss several internal and external factors that may regulate the link between DMCs and digital transformation. Specifically, in order to effectively achieve digital transformation, firms should ensure (i) a harmonious CMO-CIO collaboration, (ii) high levels of organizational readiness, and (iii) strong IS capabilities. Furthermore, firms need to invest in resilience to be able to not only weather the negative effects of environmental turbulence but also successfully transform their businesses. From a practitioner standpoint, this study provides a guideline for managers that informs them what DMCs are, how they create customer value at each of the customer journey stages, and what role other departments within the organization may play in the digital transformation journey. In addition, our COVID-19 example implies that managers should consider environmental turbulence as an opportunity that accelerates digital transformation efforts as long as they build resilience necessary to avoid the negative effects of the turbulent environment.

Considering joining another brand's social media conversation as a real-time marketing strategy, Chapter 3 is one of the first studies that examines the role of linguistic characteristics in enhancing engagement outcomes from a brand-to-brand social media communication perspective. This way, it advances the literature that has thus far investigated the linguistic characteristics – engagement relationship from a B2C viewpoint. The results from this study indicate that brands that use highly similar linguistic style to another brand in joining social media conversation may drive engagement in terms of number of quotes, which represents an active form of sharing a social media content that enables users to simultaneously provide comments. In addition, posting content in a rapid manner when joining another brand's social

media conversation appears to boost engagement outcomes in terms of retweets, likes, and replies. From a DMCs standpoint, crafting linguistically appropriate and timely content in joining another brand's social media conversation represents an effective combination of functional (social media capability) and L&O (digital marketing agility) DMCs. Specifically, while linguistic style considerations on social media is important, the ability to do so in a timely manner requires agile decision-making capacities.

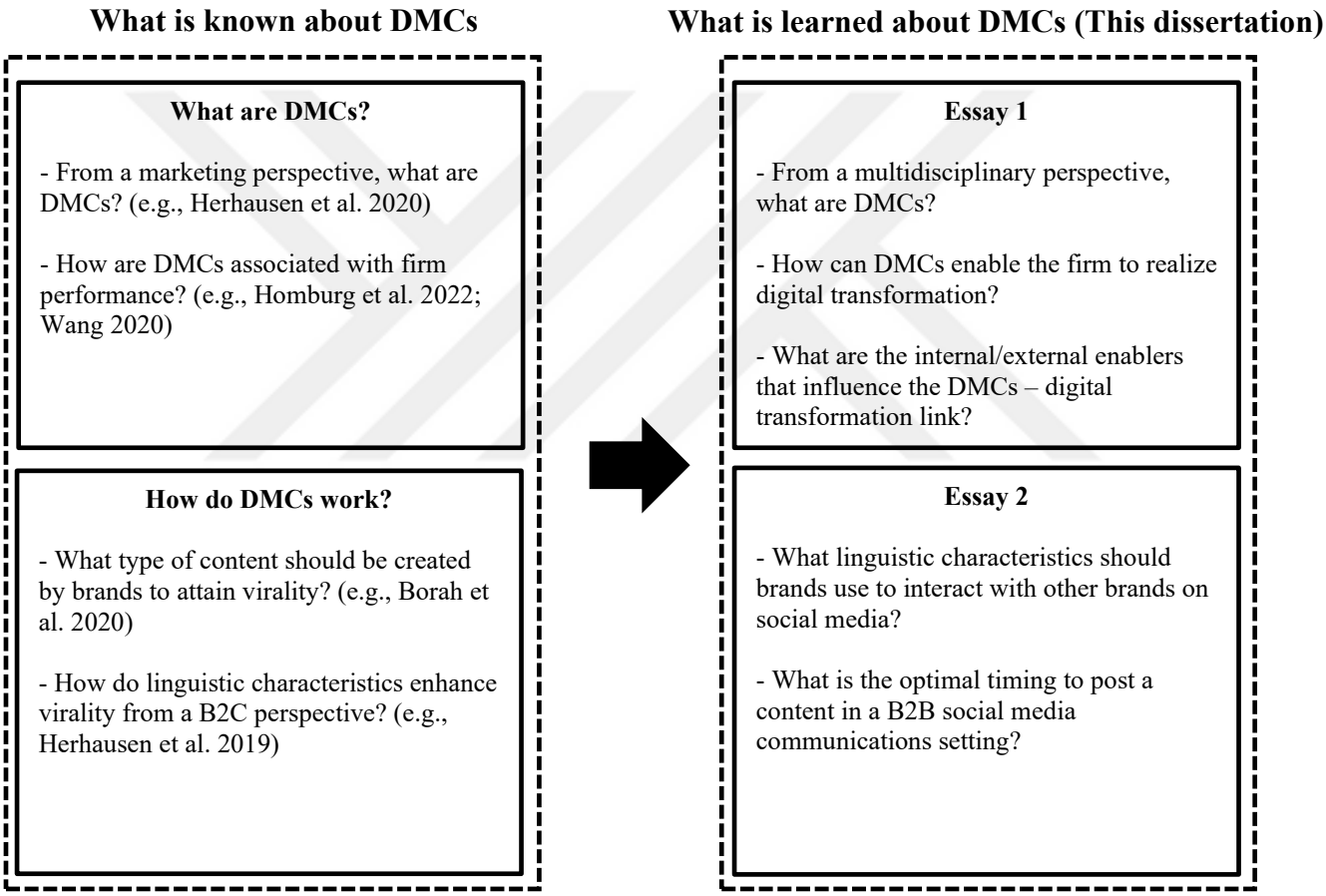

Figure 5 Contributions of this dissertation

APPENDIX

Table 8 Sensitivity analysis results for retweets

RETWEETS						
Model 1: Control-only			**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	4.766***	.274	4.467***	.554	4.476***	.692
LSM			.871	.551	.858	.840
Order			-.001	.0002	-.001**	.0006
LSM x Order					.00002	.0008
Controls						
B2C LSM	-3.666***	.340	-2.765***	.514	-2.780***	.879
Multimedia	-.888***	.216	-.778***	.215	-.778***	.215
Word count	-.039***	.013	-.010	.019	-.010	.019
Cognitive process	.023**	.009	.021**	.009	.021**	.009
Positive emotion	.029*	.017	.009	.016	.009	.016
Negative emotion	-.079**	.035	-.078**	.036	-.079**	.036
Brand followers/10000	.006***	.001	.006***	.001	.006***	.001
Brand tweets/10000	-.002*	.001	-.002*	.001	-.002*	.001
Hours	-.168***	.016	-.103***	.020	-.103***	.021
Industry	Yes		Yes		Yes	
Number of observations	1,683		1,683		1,683	
Log-likelihood	-3971.758		-3958.041		-3958.041	

***p<.01, **p < .05, *p < .1

Table 9 Sensitivity analysis results for likes

LIKES						
Model 1: Control-only			**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	7.938	.203	7.950	.422	8.384***	.514
LSM			.553	.415	-.120	.612
Order			-.001***	.000	-.002***	.0004
LSM x Order					.001	.001
Controls						
B2C LSM	-2.914***	.243	-2.231***	.374	-3.034***	.654
Multimedia	-.960***	.162	-.852***	.161	-.886***	.162
Word count	-.056***	.009	-.035**	.014	-.035**	.013
Cognitive process	.027***	.006	.024***	.006	.024***	.007
Positive emotion	.019	.012	-.001	.011	.004	.012
Negative emotion	-.073***	.021	-.066***	.020	-.067***	.020
Brand followers/10000	.006***	.001	.006***	.001	.006***	.001
Brand tweets/10000	-.002***	.001	-.002***	.001	-.002***	.001
Hours	-.108***	.008	-.066***	.011	-.063***	.012
Industry	Yes		Yes		Yes	
Number of observations	1,683		1,683		1,683	
Log-likelihood	-8717.687		-8692.162		-8691.026	

***p<.01, **p < .05, *p < .1

Table 10 Sensitivity analysis results for replies

REPLIES						
Model 1: Control-only			**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	2.909***	.206	3.103***	.370	2.670***	.459
LSM			.381	.374	1.064*	.578
Order			-.001***	.0002	-.001	.0004
LSM x Order					-.001	.001
Controls						
B2C LSM	-2.269***	.264	-1.901***	.391	-1.178*	.609
Multimedia	-.568***	.166	-.529***	.162	-.527***	.162
Word count	-.042***	.008	-.029**	.011	-.029**	.011
Cognitive process	.013**	.006	.013**	.006	.013*	.006
Positive emotion	.0003	.010	-.012	.010	-.013	.010
Negative emotion	-.036*	.020	-.034*	.019	-.032*	.019
Brand followers/10000	.008***	.001	.007***	.001	.007***	.001
Brand tweets/10000	-.001	.001	-.0002	.001	-.0002	.001
Hours	-.076***	.010	-.018	.013	-.021	.014
Industry	Yes		Yes		Yes	
Number of observations	1,683		1,683		1,683	
Log-likelihood	-3884.557		-3857.107		-3855.966	

***p<.01, **p < .05, *p < .1

Table 11 Sensitivity analysis results for quotes

QUOTES						
Model 1: Control-only			**Model 2: Main effects**		**Model 3: Full Model**	
Variable	**α**	**SE**	**α**	**SE**	**α**	**SE**
Constant	3.816	.407	2.838***	.810	1.939*	.932
LSM			2.041***	.750	3.466***	1.092
Order			-.002***	.000	-.001	.001
LSM x Order					-.002*	.001
Controls						
B2C LSM	-2.901***	.599	-1.250*	.753	.285	1.141
Multimedia	-1.191***	.318	-1.086***	.304	-1.080***	.300
Word count	-.065***	.018	-.001	.025	-.004	.026
Cognitive process	.030**	.015	.037**	.015	.037**	.014
Positive emotion	.017	.029	-.019	.021	-.024	.020
Negative emotion	-.142**	.066	-.125**	.062	-.115*	.063
Brand followers/10000	.008***	.001	.006***	.001	.006***	.001
Brand tweets/10000	-.004*	.002	-.003*	.002	-.003*	.002
Hours	-.112***	.022	-.021	.026	-.030	.027
Industry	Yes		Yes		Yes	
Number of observations	1,683		1,683		1,683	
Log-likelihood	-2145.853		-2120.5004		-2119.050	

***p<.01, **p < .05, *p < .1

Chapter 5

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