

Digital Competence of Firms

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DIGITAL COMPETENCE OF FIRMS

Abstract:

Digital transformation demands a permanent willingness and ability to change. Prior research has highlighted the importance of digital marketing capabilities for a company's performance. However, for marketing management, companies should not only have digital marketing skills but also be digitally competent in a broader sense. While a broad spectrum of work exists on digital competence on the individual level, research has not yet focused on digital competence of firms. Thus, the objective of this study is to develop a clear conceptualization of digital competence of firms. Using a grounded theory approach, we identify three key dimensions that form digital competence of firms: a digital mindset, appreciation of digital transformation, and technological expertise. We highlight the need for firms to be digitally competent and add to a fundamental understanding of the underlying concept of digital competence, thereby making both theoretical and practical contributions

Keywords: Digital Competence, Marketing Capabilities, Grounded Theory

Track: Marketing Strategy & Theory

1. Introduction

Digital transformation at the firm level is commonly associated with integrating new technologies. However, an even more important task is to conceptually adapt existing and develop new core processes to be able to face today's challenges of the digitized markets. This relates to a broad spectrum of topics, like business models, value creation, social interaction, communication, and collaboration (Verhoef et al., 2021). Recently, the COVID-19 pandemic has further accelerated this development (Amankwah-Amoah et al., 2021). From a marketing perspective, digital transformation also introduces new touchpoints into the customer journey through which firms can communicate, interact, and transact, which further underlines the importance of developing a holistic digital marketing strategy (Kannan & Li, 2017). It is, therefore, crucial to thoroughly understand and anticipate how consumer behavior changes due to digital transformation. In sum, these developments require companies to develop digital competence as a firm resource (Sebastian et al., 2017). However, researchers point out that there is still a "jargon jungle" (Ferrari, 2012, p. 11) as to the definition of digital competence. Moreover, scholars primarily investigate digital competence on an individual level rather than on the organizational level (e.g., Ferrari, 2012; Murawski & Bick, 2017). In our study, we propose a conceptual framework of the digital competence of firms from the insights gained through qualitative interviews analyzed with a grounded theory approach. More precisely, we address the following research questions: i) What is digital competence of firms? ii) How can a company gain digital competence; what are the drivers and barriers? We contribute to the existing literature by extending the conceptual framework about digital competence and highlighting its importance for marketing management. Further, our study offers implications that may advance organizational thinking about becoming (more) digitally competent.

2. Conceptual Background

Prior studies propose that progression in digital technology has continuously been transforming the marketing landscape for several years, demanding a new set of marketing capabilities (Moorman & Day, 2016; Kannan & Li, 2017). Marketing capabilities are a firm's knowledge, skills, and abilities immersed in the organizational processes, which make up the competence that drives a company's business (Moorman & Day, 2016). In return, competence is commonly defined as the ability to do something well or efficiently. However, the nature of competence has also evolved in the light of technological developments, and the resulting

changes in business models now encompass more dynamic and digital marketing capabilities (Teece et al., 1997; Sebastian et al., 2017; Verhoef & Bijmolt, 2019). Recent empirical evidence suggests that developing specific capabilities for digital marketing activities, such as social media marketing and mobile marketing, is positively correlated to the firm's performance (Homburg & Wielgos, 2022). In addition, Murawski & Bick (2017) also point out that digital transformation includes the development of digital competence. With respect to digital competence, however, numerous definitions exist that vary given the context, e.g., digital literacy, IT skills, and e-skills, predominantly on an individual level (e.g., Ferrari, 2012; Murawski & Bick, 2017). Thus, there is a poor understanding of the construct of digital competence of firms. Also, Herhausen et al. (2020, p. 276) state that "most attention has been given to the tremendous opportunities digital marketing presents, with little attention on the actual related competences that firms need to be successful." Although numerous studies attempt to explain the role of digital marketing capabilities (e.g., Moorman & Day, 2016; Homburg & Wielgos, 2022), to the best of our knowledge, no previous study has shed light on the overall digital competence of firms. Thus, we focus on what constitutes digital competence of firms.

For our empirical foundation, we use an inductive discovery-oriented proceeding by a grounded theory approach (e.g., Glaser & Strauss, 1967). The empirical evidence relies on practical experience gained by experts dealing with digital transformation whom we interviewed.

3. Grounded Theory Approach

In this study, we adapt the basic procedures suggested by Glaser and Strauss (1967). However, we follow the Straussian approach and share Strauss and Corbin's (1998) argumentation that formulating property dimensions and subcategories are necessary to explain the central phenomenon and ultimately form a theory or, in our case, a conceptual framework.

3.1 Data Collection

We gathered data through semi-structured in-depth interviews and interviewed 22 managers working in different functions, industry sectors, and company sizes. We stopped the sampling process after reaching theoretical saturation, i.e., when gathering more data did not lead to any new insights (Strauss & Corbin, 1998). The method requires constantly comparing the analyzed interviews with newly conducted interviews to identify differences and

similarities. Overall, we thus followed the theoretical sampling method of grounded theory (Glaser & Strauss, 1967). As we did not plan data collection in advance, but we decided what to collect next based on the emerging concepts and categories during analysis.

The sample size of 22 meets the requirements of the recommended sample size for exploratory approaches (McCracken, 1988). The interviews took place from May 2022 to July 2022. Table 1 provides an overview of the participants. The participant's employers ranged from small-sized businesses (11 employees) to large corporations (250,000 employees) operating in various sectors, e.g., digital marketing and media, auditing and consulting, software engineering, tourism, and cosmetics.

Table 1

Qualitative Study Sample

Participant Background	Company Size (Number of Employees)	Sector
Development Manager	107,415 ^a	Software
Head of Strategy and Marketing	50 ^b	AI, advertising service
Vice President, Head of Systems Integration	28,000 ^a	ICT
Manager Customer Transformation and Experience Consulting	250,930 ^a	Auditing, Consulting
Manager Marketing Strategy and Program Management/Digitization	170 ^b	Mobility
Head of Blockchain and Digital Identity	800 ^a	IT
HR Developer	5260 ^a	Auditing, Consulting
Chief of Customer Experience	50 ^b	Media, advertising service, marketing
Head of Data and Media	1000 ^a	Media, advertising service, marketing
eCommerce Business Intelligence Expert	6000 ^b	Cosmetics
Chief Customer Officer	70 ^b	IT
Head of Online Marketing	260 ^b	Tourism
Managing Partner	5000 ^a	Advertising, marketing
CEO	11 ^b	Digital service
Senior Director of Sales and Consulting	1000 ^a	Communication, advertising
Customer Success Manager	1639 ^a	Software
Digital Sales Representative	17,500 ^a	Sports equipment
Team Lead, Creative Director	160 ^b	Media, advertising service, marketing
Project Manager	39,000 ^a	Chemistry
Managing Partner	220 ^b	Digital marketing
Director of Consumer and eCommerce	1000 ^b	FMCG
Software Solution Architect	15,000 ^a	Special mechanical engineering

^aWorldwide

^bGermany

Our interview guideline consisted of two parts. First, we asked participants to describe their professional backgrounds and experience with digital transformation. Next, respondents were asked open questions related to our research questions. The objective was to reveal as

much background information, experience, and examples as possible from interviewees. On average, the interviews lasted 47 minutes. Each interview was recorded and transcribed verbatim.

3.2 Analysis and Interpretation

For the analysis, we rely on three modes of open, axial, and selective coding (Strauss & Corbin, 1998). Employing open coding, we independently micro-analyzed the data line by line to identify definitions, characteristics, categories, and properties of digital competence of firms. Any indication emerging during the analysis was marked, labeled with codes, and upcoming ideas were composed as memos (Strauss & Corbin, 1998). We examined our interpretations of the interview transcripts by comparing and debating our coding outcomes. Further, we jointly created a first coding plan that considers the dimensions of digital competence of firms as well as drivers and barriers, supported with examples from the participants and memos. By means of axial coding, we then formed categories from data with commonalities, such as when several participants mentioned the same construct. If distinctions emerged, we developed subcategories. We also investigated relations between categories, their properties, and dimensions and identified core categories to which other concepts are linked. Next, we developed a relationship model that evolved through continuous data comparison. Finally, we reviewed the core categories and their relations for selective coding and developed our framework.

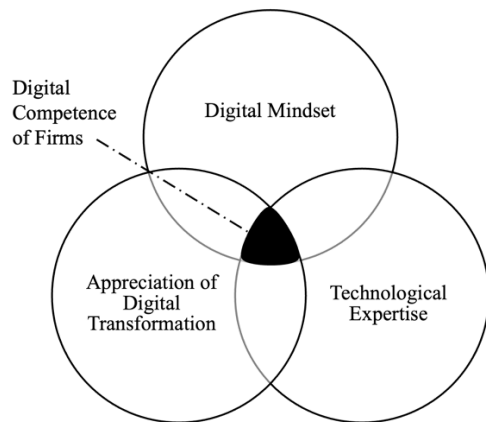
To account for reliability, two independent assessors re-examined our transcripts and coding plan to verify the accuracy of the resources as well as the identified categories and concepts. They agreed with our coding process and overall structure and only offered minor suggestions regarding the wording of our framework.

4. Digital Competence of Firms

Our study reveals a three-dimensional construct of digital competence of firms, comprising i) digital mindset, ii) appreciation of digital transformation, and iii) technological expertise. Figure 1 integrates the core concepts identified in our research into an overall framework, which we define in the following. The overlapping parts of the three dimensions illustrate the digital competence of firms derived from the integration of the three categories.

Figure 1

Conceptualization of Digital Competence of Firms



4.1 Digital Mindset

The interviews reveal that a company's mindset shapes the corporate culture and, thus, the actions and behaviors of the workforce. In many instances, participants stated routine stickiness as a barrier to digital change—especially in the German organizational culture. As one manager disclosed, “The biggest barrier is a cultural barrier to change, which every organization has, but which is also still more firmly rooted in our German organizational culture than we know from other cultures.” A firm’s ability to have a corporate digital mindset based on an open and positive attitude toward new technologies and processes defines and drives gaining digital competence. Thus, the digital mindset also includes a firm’s ongoing willingness to change and develop. Some interviewees considered a trial-and-error culture, which encourages employees to fail and learn from failure. The aim is to help employees overcome their fear of the digital world.

4.2 Appreciation of Digital Transformation

The appreciation of the long-term value gained through digital transformation is a clear driver of digital competence. Several managers pointed out that the implementation of digital marketing tools and tactics is not enough to develop digital competence. Instead, a holistic understanding of digital transformation and what it means for companies is crucial for developing digital competence. This also contains forward-thinking. For example, one manager stated, “For me, digital competence is also a look into the future with the question of how it will change, taking technology into account.” Another one pointed out, “I understand that in 2022 a company is positioned in such a way that it can still exist in 2040.” Therefore, a

firm's digital competence is also about being able to anticipate how change will affect its business today and in the future. Another crucial aspect in this context is the overarching understanding of digital transformation. As one manager mentioned, "I understand what that even means. I understand the benefits. However, I also understand the risks." Another explained, "That I simply have a more or less strong familiarity and knowledge towards digital tools and digital media, which can help me as a company, for example, in the customer relationship management, also how I deal with digital marketing." Thus, overarching understanding is also about understanding digital transformation in terms of different disciplines, phases, and application areas, not only in terms of a particular problem.

4.3 Technological Expertise

The third dimension of digital competence of firms is technological expertise. Importantly, we propose that digital competence is not primarily about using new technology. Instead, technological expertise is more about thoroughly understanding which technology exists and when to use what type most effectively. As an interviewee explained, "The point is that you do not just do the same thing with a new digital tool, but that you also understand that the process changes and you change. And to question why we are working this way, what benefits does it bring us?" Thus, technological expertise is also about having a critical view, questioning technology, and gaining knowledge of the risks and limitations of using specific technologies. Depending on managers' functions, this expertise may be predominant at the operational level. However, the interviews revealed that it is insufficient to have technological expertise in only specific units or departments. Instead it should be a requirement for the entire organization. Thus, a company's digital competence can only evolve when technology expertise exists.

Finally, the macro environment impacts the firm's digital competence. Factors include demographic changes in relevant markets, new regulations (e.g., data privacy), competition, digital trends, and COVID-19. Therefore, interviewees explained that technological expertise could help a company react better and faster to environmental changes.

5. Discussion and Implications

This study set out that there is a need for conceptualizing digital competence of firms. Thus, our aim was to investigate the factors that determine and define this construct. With this objective in mind, we propose a framework of digital competence of firms, including its

drivers and barriers. Importantly, our holistic approach defines digital competence as an overarching construct. We identify three dimensions, digital mindset, appreciation of digital transformation, and technological expertise, which form digital competence of firms. We conceptualize digital competence of firms as follows:

The digital competence of a firm means that a company perceives, understands, and appreciates digital transformation in an all-encompassing manner to derive actions from it. This appreciation of digital transformation combined with technological expertise enables a company to choose the appropriate technologies, tools, and activities to be successful. Without a digital mindset, a company cannot achieve digital competence. The digital mindset forms the motivation to go with the change and to build technological and data-based expertise. Digital competence is a continuous process requiring forward-thinking.

Regarding drivers and barriers of digital competence, it is remarkable that primarily external factors, e.g., competitive environment, innovations, and COVID-19, were mentioned. We also found that companies cannot avoid building digital competence when they want to survive in the long run. As one of our interviewees stated, “And even if you have analog products, you cannot avoid thinking about digital touchpoints in the digital era, for example, in the customer journey. That is where you need digital competence at the latest.” An explanation of this finding is that digital transformation will continue to advance due to ever-new technological developments. Companies must be ready for change and build capabilities and resources. It can thus be suggested that companies will stagnate or even perish if they fail to develop digital competence.

5.1 Implications for Theory

The current study builds on the growing research interest in how companies survive and thrive in a digital world. Prior research argues that digital skills, knowledge, and activities are necessary for companies to successfully master digital transformation, gain competitive advantages, and respond to customer needs (Sebastian et al., 2017; Amankwah-Amoah et al., 2021; Homburg & Wielgos, 2022). Although extensive research has supported the immense importance of digital marketing capabilities for a company’s performance (e.g., Moorman & Day, 2016; Homburg & Wielgos, 2022), no study in the marketing field has focused on the overarching construct of digital competence of firms. In other disciplines, only the digital competence of individuals has been investigated (e.g., Ferrari, 2012). Thus, we undertake an important step in closing this gap as our conceptual framework of digital competence takes a

new perspective. Our findings contribute to the marketing literature as we propose a prerequisite for making marketing decisions and selecting (digital) marketing activities. Furthermore, our study provides evidence for using the Straussian grounded theory approach to build a conceptual framework.

5.2 Implications for Practice

Companies can create value for themselves and their customers and be competitive if they use digital technologies and thus build digital marketing capabilities (Kannan & Li, 2017). However, it is most important to recognize, evaluate and anticipate how consumer behavior will change due to the emergence of new forms of interaction and transaction, digital business models, and related technologies and to plan the organizations' marketing strategies accordingly. Managers may build on our conceptual framework as a guideline for responding to digital transformation by developing a new understanding and related skills. We argue that thoroughly understanding digital competence and the three core concepts is mandatory to find levers to account for the competitiveness of the firm and grant long term success. Within the dimensions of appreciation of digital transformation and technological expertise, a conscious and critical examination of digital possibilities characterizes the digital competence of firms. These results provide a necessary implication for making marketing decisions. It enables companies to assess whether, when, and what digital marketing capabilities are worthwhile. Thus, a firm's superior digital competence is the fundamental prerequisite for marketing management.

5.3 Limitations and Future Research

One limitation is that this research only considers the German market. Future research should focus on generating data from other countries, which might show interesting cultural differences and variations in transformational processes. In addition, a natural next step is the empirical validation of our framework. Future studies could also investigate the relationship and dependencies between digital competence of firms and digital marketing capabilities. Furthermore, from a practical perspective, it would be interesting to develop a self-assessment tool in which companies can evaluate the status quo of their digital competence and directly derive action recommendations.

Although our framework is conceptually stable, ongoing developments should be constantly considered und incorporated.

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