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Organizational capabilities in the digital era: Reframing strategic orientation



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ABSTRACT

The digital era is changing consistently the previous marketing scenarios and actual issues have to be addressed in order to close the capabilities gap created by digital innovations. Different authors call for theoretical and empirical contributions that cope with the issues brought out by the digitalization of marketing channels and the consequent ever increasing volume of digital data. This study develops a theoretical framework and propositions through a reframing and reconceptualization of previous theoretical constructs from managerial and marketing literature. The resulting model offers insights about organizational processes and capabilities needed to cope with the actual fast changing, but at the same time, data-rich environment.

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Capacidades de organización en la era digital: reformulación de la orientación estratégica

R E S U M E N

La era digital cambia constantemente los escenarios de marketing y se deben abordar problemas reales para poder cubrir el vacío en cuanto a habilidades creado por la innovación tecnológica. Varios autores ponen de relieve la demanda de contribuciones empíricas y teóricas que lidien con los problemas causados por la digitalización de los canales de marketing y el consecuente constante aumento de información digital. Este trabajo desarrolla un marco y proposiciones teóricas a través de la redefinición y reconceptualización

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Marketing capacidades
dinámicas
Proceso de conocimiento
Sensibilidad organizativas
Performance de la organización

de ideas previas de la literatura de marketing y de gestión. El modelo resultante identifica los procesos organizativos y habilidades necesarias para enfrentarse a este contexto tan cambiante y enriquecedor en cuanto a datos se refiere.

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Introduction

The recent marketing and managerial literature widely recognize that radical technological and environmental changes are transforming marketing scenarios (Day, 2011; Yadav & Pavlou, 2014). The main contemporary issues derived from that literature are: (1) the exploding volume of data (e.g. Kumar et al., 2013; Leeflang, Verhoef, Dahlström, & Freundt, 2014), (2) the new networked and pervasive information technology (IT) or computer-mediated environment (Leeflang et al., 2014; Yadav & Pavlou, 2014) and (3) the consequent fragmentation of market channels and customer touch-points (Day, 2011; Leeflang et al., 2014). All the previous arguments have in common the question about how to manage the information overload deriving from fragmented marketing channels and environments in order to make sense of it and to understand and respond to environmental changes (Day, 2011).

Marketing literature increasingly emphasizes the presence of gaps in organizational capabilities and skills due to the above-mentioned technological and environmental changes (see i.e. Day, 2011; Leeflang et al., 2014) and it does call for coping with these issues especially in digital market context (Yadav & Pavlou, 2014).

This study focuses specifically on the firm–customer and firm–firm interactions (Yadav & Pavlou, 2014) in order to develop a theoretical framework that both takes into consideration the most interesting insights from previous literature and at the same time tries to cope with these more recent issues caused by the switch toward an increasingly digitalized marketplace.

In firm–customer interactions, one of the main issues deals with the enhanced customer visibility, which permits to firms to collect and manage, detailed customer information. This issue can be addressed making the “role of information more explicit in this framework” and extending the Day’s (1994) strategic capabilities framework to digital contexts (Yadav & Pavlou, 2014, p. 31).

The increasing speed of environmental changes is driving managerial and marketing literature toward rethinking the theoretical roots of marketing capabilities which are traditionally rooted in resource-based view (see i.e. Day, 1994). But when firms operate in high-velocity market (Eisenhardt & Martin, 2000) they have to develop dynamic capabilities (DC) in order to obtain at least a series of short-lived competitive advantages (D’Aveni, 1994) or even a sustainable competitive advantage (Teece, Pisano, & Shuen, 1997).

For the above-mentioned reasons there is an increasing attention in theoretically framing and studying marketing capabilities as part of DC perspective, say in the studies

on dynamic marketing capabilities framework (e.g. Barrales-Molina, Martínez-López, & Gázquez-Abad, 2013; Bruni & Verona, 2009).

The aim of dynamic marketing capabilities (DMC) framework is to deepen the understanding of relations between marketing and DC and the role of marketing resources and capabilities in developing a sustainable competitive advantage (Barrales-Molina et al., 2013).

What both the traditional DC perspective and the more recent DMC framework have in common is a concern toward the importance of developing market knowledge to sense and seize, or respond to, new opportunities.

As Bruni and Verona (2009) stated: “Dynamic marketing capabilities are specifically aimed at developing, releasing and integrating market knowledge” (p. 102). Firms need both sensing capabilities in order to discover new opportunities and seizing capabilities to exploit them (Teece, 2007). Organizations can sense new opportunity toward a “scanning, creation, learning, and interpretive activity” and they need “differential access to existing information” because “new information and new knowledge (exogenous or endogenous) can create opportunities” (Teece, 2007, p. 1322).

The development of market knowledge “involves interpreting available information in whatever form it appears” (Teece, 2007, p. 1323) and managers need real-time information, especially in high-velocity market, to “adjust [more quickly] their actions since problems and opportunities are spotted” (Eisenhardt & Martin, 2000, p. 1112).

In the actual marketing scenarios the information coming from digital data are becoming central in decision-making process (see i.e. Du, Hu, & Damangir, 2015), the volume of business-related digital data is ever-increasing, it comes from dispersed sources, with high-level of granularity and it is difficult to analyze (George, Haas, & Pentland, 2014).

But given that attention of managers is limited and they cannot focus on all the possible issues and problems (Ocasio, 1997), research has to deepen the question about which types of information and knowledge have to be taken into consideration to achieve competitive advantage.

Both dynamic capabilities literature and market and strategic orientation literature agree on at least three main issues that organizations have to take into consideration: customers, competitors and technological developments. Firms have to accumulate and filter information “scanning and monitoring internal and external technological developments [...] customer needs and competitor activity” (Teece, 2007, p. 1323). A similar theoretical standing is taken in strategic orientation literature where Gatignon and Xuereb (1997) empirically test the relationship between customer, competitor and technological orientation and product innovation performance.

In the literature reviewed for this study emerges that both strategic/market orientation literature (see Gatignon & Xuereb, 1997; Kohli & Jaworski, 1990; Narver & Slater, 1990) and marketing capabilities literature (see Day, 1994; Jayachandran, Hewett, & Kaufman, 2004; Morgan, Vorhies, & Mason, 2009) already contemplate different theoretical constructs that explain the relations among high information-processing, market knowledge, market responsiveness and organizational performance.

What is missing is a framework that reorganizes and keeps up-to-date these theoretical constructs to respond to the call for adjourning the “strategic capabilities framework to digital contexts” (Yadav & Pavlou, 2014, p. 31) and also take into consideration the initially mentioned issues of the so-called “digital revolution” (Leeflang et al., 2014).

The study’s aims are: (1) develop a theoretical framework that could explain how the digitalization of marketing channels and the consequent massive expansion of real-time data can impact on organizational performance, (2) identify the specific DCs involved and also the processes that act as micro-foundations of DC and (3) develop a set of theoretical propositions that can be tested in future empirical research.

Increasing volume of digital data and organizational knowledge processes

The great expansion of Internet, mobile and social media technologies, say the “digital era” (Leeflang et al., 2014), has created a massive volume of digital data available to firms, but this “deluge of data” is challenging the traditional marketing capabilities (Day, 2011, p. 183).

The first step to theoretically reframe the strategic capabilities framework is to define the characteristics that distinguish the data coming from the marketing “digital revolution” (Leeflang et al., 2014) from the previous traditional source of information.

The data characteristics over which both managerial and marketing literature agree are: (1) the ever-increasing volume (Day, 2011; George et al., 2014), (2) the fine-grained nature of the data (George et al., 2014; Yadav & Pavlou, 2014), (3) the different digital sources they come from, such as web, social media and mobile applications (Chen, Chiang, & Storey, 2012; Day, 2011) and finally (4) they are real-time produced and potentially analyzable real-time (George et al., 2014; Trainor, Andzulis, Rapp, & Agnihotri, 2014).

These data are making tangible and empirically verifiable the theoretical statement of Eisenhardt and Martin (2000) about managers’ use of real-time information in high-velocity market. Real-time digital data permit to deploy real-time data analytics and as a consequence a real-time decision making (George et al., 2014).

On the other hand, in presence of a massive amount of data, organizations risk the so-called “paralysis through analysis” (Peters & Waterman, 1982) due to the overload of data and analysis that slow down decision-making processes. But if organizations deploy proper analytics they can make sense of data and use them strategically (e.g. Chen et al., 2012; Davenport, 2006; Kiron & Ferguson, 2012) moreover recent studies have empirically tested the positive impact

of analytics over firm performance (Germann, Lilien, & Rangaswamy, 2013; Germann, Lilien, Fiedler, & Kraus, 2014).

What emerges from organizational learning theory (Huber, 1991; Sinkula, 1994) is that the availability of information does not necessarily increase organizational performance and in order to do so there is the need of structured organizational knowledge processes (see i.e. Jayachandran et al., 2004; Li & Calantone, 1998).

Information processing abilities are critical due to the increasing volume of available market data and these abilities are valuable in order to obtain a competitive advantage because they are difficult to achieve and to imitate (Day, 1994; Hult, Ketchen, & Slater, 2007).

For this reason, the concept of organizational knowledge processes is introduced in the theoretical framework. From the seminal studies on this concept emerges its link with market orientation literature since the authors (see Li & Calantone, 1998) define it as the set of behavioral activities that characterized the market orientation construct. Following organizational learning theory (Huber, 1991; Sinkula, 1994) they define customer and competitor knowledge process as the process consistent in the three steps of acquisition, interpretation and integration of customer or competitor-related information (Jayachandran et al., 2004; Li & Calantone, 1998).

In the same period also the issue of technological developments and changes is analyzed in marketing literature. The technological opportunism concept is developed in such a way that it is defined as the “sense-and-respond capability of firms with respect to new technologies” (Srinivasan, Lilien, & Rangaswamy, 2002, p. 48). Technological opportunism concept is conceived, from its origin, as constituted by two distinct capabilities: technology-sensing capability, or the “organization’s ability to acquire knowledge about and understand new technology development”, and the technology-response capability, which is the “organization’s willingness and ability to respond to the new technologies it senses in its environment” (Srinivasan et al., 2002, pp. 48–49).

Analyzing both the authors’ statements about technology-sensing capability (see i.e. “organization that has strong technology-sensing capability will regularly scan for information about new technological opportunities and threats”, p. 48) and the measurement items this study argues that the most important process that acts as micro-foundation and undergirds this capability is a knowledge process related to technological changes.

Organizational knowledge processes and market performance: the mediating role of responsiveness

The idea that market-related information processing, say market intelligence (Kohli, Jaworski, & Kumar, 1993), is strongly connected with the firms’ market responsiveness dates back to seminal studies on market orientation (Jaworski & Kohli, 1990; Kohli & Jaworski, 1990; Narver & Slater, 1990) which include the concept of responsiveness inside the market orientation construct itself.

Even if different studies have shown a direct positive effect of customer and competitor knowledge process over

product innovation (e.g. Li & Calantone, 1998) and even a slightly significant direct effect of knowledge processes over firm performance (Ozkaya et al., 2015), most of the marketing and managerial literature agrees on the mediating role of organizational responsiveness (see i.e. Bhatt, Emdad, Roberts, & Grover, 2010; Homburg, Grozdanovic, & Klarmann, 2007; Wei & Wang, 2011).

One of the first definitions of organizational responsiveness is provided by Kohli and Jaworski (1990): “Responsiveness is the action taken in response to intelligence that is generated and disseminated.” (p. 6), but similar conceptualization is also in more recent literature where customer-related (competitor-related) responsiveness is defined “as the extent to which an organization responds quickly to customer-related [competitor-related] changes” (Homburg et al., 2007, p. 19) and also “organizational responsiveness [can be defined] as the extent to which a firm responds to market changes” and it “results from firms’ gathering, sharing, and interpretation of environmental information” (Wei & Wang, 2011, p. 270).

Also in the framing of organizational responsiveness, in order to consider the third dimension of the strategic orientation framework (Gatignon & Xuereb, 1997), say the technological changes, the study refers to the literature on technological opportunism (TO). Both in the seminal study on the technological opportunism (Srinivasan et al., 2002) and in the more recent empirical verification of TO impact over organizational performance (Chen & Lien, 2013; Lucia-Palacios, Bordonaba-Juste, Polo-Redondo, & Grünhagen, 2014), the TO construct is based on two dimensions: sensing and responding capabilities. Thus, technological-responding capability can be defined as “organization’s willingness and ability to respond to the new technologies it senses in its environment that may affect the organization” (Srinivasan et al., 2002, p. 49) or likewise as “related to the extent to which an organization is willing and able to respond to new technologies” (Lucia-Palacios et al., 2014, p. 1179).

Given the above-mentioned theoretical statements and empirical verifications the first three propositions can be stated:

Proposition 1. *The use of customer-related digital real-time data has a positive impact over customer responsiveness mediated by customer knowledge process.*

Proposition 2. *The use of competitor-related digital real-time data has a positive impact over competitor responsiveness mediated by competitor knowledge process.*

Proposition 3. *The use of technology-related digital real-time data has a positive impact over technology responsiveness mediated by technology knowledge process.*

The last step for developing a comprehensive theoretical framework is to advance propositions that clarify the impact of the previously mentioned construct over organizational performance.

As Dickson (1992) suggests the “variance in responsiveness” and the exploit of “knowledge and response imperfection” (pp. 75–76) can be sources of competitive advantage. Also the DC literature has emphasized the importance of being responsive to new opportunities and changes in order to gain competitive advantage (Eisenhardt & Martin, 2000; Teece et al., 1997; Teece, 2007).

Then the positive effect of organizational responsiveness over performance is tested in both strategic management (see i.e. Hult et al., 2007) and marketing (see i.e. Homburg et al., 2007; Jayachandran et al., 2004) literature.

Different empirical studies have shown that customer (and competitor) responsiveness has a positive impact on market performance (see i.e. Homburg et al., 2007; Jayachandran et al., 2004). Recently other studies have empirically verified in more general terms the relation among organizational responsiveness and competitive advantage finding a positive and consistent relationship (e.g. Bhatt et al., 2010; Wei & Wang, 2011).

Also in the case of responsiveness the literature on TO can be, in a way, adapted even if the construct itself analyzes simultaneously the technological sensing and responding capability.

Some recent studies have empirically tested and confirmed the positive, direct and mediated, effect of TO over firm performance (Chen & Lien, 2013; Lucia-Palacios et al., 2014).

Given the intent to follow the approach of Homburg et al. (2007), which analyze the market orientation construct (Narver & Slater, 1990) following the Noble, Sinha, and Kumar (2002, p. 28) suggestion to study it “in a disaggregated manner”, this study tries maintain the same principle and coherence in

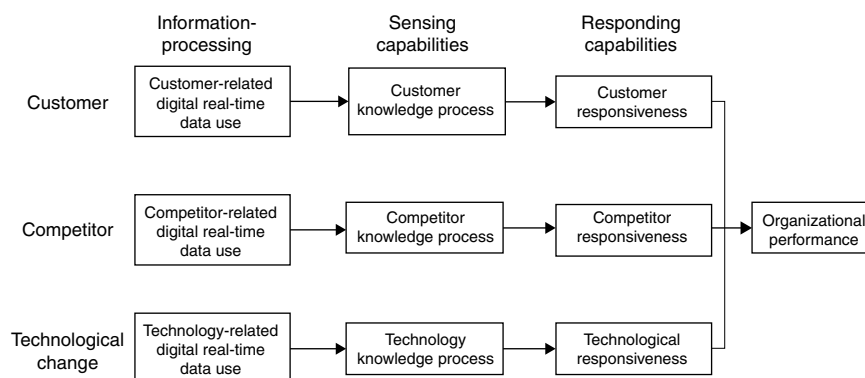


Fig. 1 – The sense and respond capabilities model in the digital era.

the following propositions about the relationship of organizational responsiveness and performance.

Proposition 4. *Customer responsiveness is positively related with organizational performance.*

Proposition 5. *Competitor responsiveness is positively related with organizational performance.*

Proposition 6. *Technological changes responsiveness is positively related with organizational performance.*

All the developed theoretical proposition can be visualized in the following Fig. 1 that represents a hypothesis of the model which can be tested in future research. The model shows in the horizontal axis the different organizational features considered and the vertical axis displays the three strategic orientation dimensions considered.

Conclusions

After approximately thirty years from the seminal papers about market orientation, strategic orientation and organizational learning theory, some of the concepts developed in that historical period could be valid yardsticks still in the actual context and they can be reframed to answer to the recent call toward closing the capabilities gap in the digital era. Of course, the context and the rules of the game are changed, but this study shows that reframing and redefining some of those concepts lead to theoretically supported propositions that can answer also to the initially mentioned issues of the digital era.

Future research can enhance the proposed model and investigate, more deeply, inside the organizational processes. Particularly interesting is to deepen the knowledge about how this “deluge of [digital] data” is processed inside the organizations to gain useful insights about the external environment, especially how organizations filter and select the most consistent data and how highly automated and algorithmic analytics influence these processes.

From an empirical point of view, future research should empirically test the propositions in order to verify if the model can consistently explain the impact of the recent data-rich environment and the use of real-time digital data over organizational capabilities and performance.

This study reframes some useful and powerful concepts of the previous marketing and strategic orientation literature in the dynamic capabilities framework in order to move from the resource-based view to another theoretical framework, which is able to fit better with the actual extremely dynamic and changing environment, providing a contribution also to the actual debate about dynamic marketing capabilities. Finally, it brings out some specific processes and capabilities that undergird sense and seizing dynamic capabilities giving the chance to empirically test with future research the impact of these specific micro-foundations over organizational performance and competitive advantage potentially contributing to the debate on micro-foundations of dynamic capabilities.

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