

Integrating information technology and marketing: An examination of the drivers and outcomes of e-Marketing capability

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ABSTRACT

This research examines the performance implications of integrating information technology with marketing capabilities and other firm-level resources. Specifically, this study introduces and empirically tests a model that conceptualizes e-Marketing as the integration of complementary technology, business and human resources that, when combined, positively influence firm performance. The results from a survey of 522 Belgian firms highlight the importance of how market and technology orientation leads to e-Marketing capability and that this capability is shown to positively influence firm performance by improving customer retention and satisfaction. The results suggest that researchers and practitioners should pay special attention to the complementary resources that are needed to successfully implement IT-enabled marketing initiatives and that an emphasis on the technology alone may not be sufficient.

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1. Introduction

Marketing managers have turned to information technology (IT) to cope with the ongoing challenge of getting more from marketing resources while simultaneously meeting greater expectations to establish durable relationships with customers. Recent studies suggest that organizations can improve customer acquisition and retention by integrating IT into their marketing practices to foster rich interactions with their customers (Brodie, Winklhofer, Coviello, & Johnston, 2007; Coviello, Milley & Marcolin, 2001). This assimilation of IT and marketing, commonly referred to as *e-Marketing*, encompasses a broad set of interaction-enabling technologies that are frequently used in industrial business-to-business (B2B) markets including customer relationship management (CRM) software, sales force automation (SFA), e-commerce websites, and extranets (i.e., private websites set up specifically for a customer). While researchers have presented empirical evidence that relates IT-enabled customer interactivity to firm performance (Brodie et al., 2007; Wu, Mahajan & Balasubramanian, 2003), there remains a gap in our understanding of how IT and marketing resources are combined to

develop new capabilities. Given the pervasive use of IT within marketing today, it is critical to further expand our knowledge of the drivers of e-Marketing capability and how this capability has the potential to enhance firm performance and generate a competitive advantage.

The resource-based view (RBV) provides a sound foundation for examining how IT and complementary resources can be bundled to form advantage-generating capabilities (Wade & Hulland, 2004). While researchers have since used the RBV to examine IT-enabled marketing capabilities (Lai, Wong & Cheng, 2010; Nath, Nachiappan & Ramanathan, 2010), to our knowledge little research grounded in the RBV has examined outside-in capabilities that connect a firm to its environment and foster strong relationships with customers. The purpose of this study, therefore, is to build from the foundation provided by past research on e-Marketing and extend this knowledge by examining e-Marketing as a dynamic firm-level capability. Furthermore, we examine the direct role of resource endowments on capability development as well as the interactive effects of these resources and the competitive environment. These interactive effects have received little attention in the IT-RBV literature in general (Wade & Hulland, 2004) and, to our knowledge, have not yet been examined within the marketing technology context specifically.

We aim to contribute to the growing body of literature emphasizing a capabilities-based view by developing and testing a model that informs future theoretic and empirical examinations of e-Marketing capability. To achieve this goal, the current study presents and empirically tests a model of how several idiosyncratic resources can be exploited to positively

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influence customer relationship performance and, ultimately, organizational performance. Specifically, our focus is on how information technology resources are integrated with a firm's complementary human and business resources to create competency in connecting and interacting with interorganizational customers resulting in higher customer satisfaction and retention. With the capabilities-based view serving as the primary conceptual lens, literature from marketing, information systems and strategic management is used to develop our conceptual model of the firm-specific capability of e-Marketing along with its antecedents and outcomes.

2. Theoretical background

2.1. Resource based view and dynamic capabilities

Day (1994) posits that distinctive capabilities, defined as the unique bundling of skills and resources that facilitate the execution of business processes, are what ultimately contribute to a sustainable competitive advantage and superior performance. This view asserts that distinctive capabilities 1) deliver superior customer value or allow the firm to deliver value in a more cost-effective way and 2) cannot be readily matched by rival firms. It is further suggested that distinctive capabilities facilitate adaptation to changes in the environment (Boynton & Victor, 1991) and provide a firm with an advantageous position (Day & Wensley, 1988). Day (1994) goes on to suggest that "a direct connection exists between the mastery of distinctive capabilities and superior profitability" (p. 40).

In parallel with the marketing literature's attention toward the strategic importance of capabilities, Teece, Pisano and Shuen (1997) introduce the dynamic capabilities view in the strategic management literature. This perspective, which highlights how some firms develop and sustain competitive advantages and superior profitability, is an extension of the resource-based view (RBV) of the firm. The RBV states that resources that are valuable, rare, inimitable and non-substitutable make it possible for businesses to maintain a competitive advantage (Barney, 1991; Wernerfelt, 1984). The extension provided by the dynamic capabilities view emphasizes the key role of management to appropriately adapt, integrate and reshape organizational skills and resources as well as internal and external functional competences. Competitive advantage is described in light of this theory as "not just a function of how one plays the game; it is also a function of the 'assets' one has to play with, and how these assets can be deployed and redeployed in a changing market" (Teece et al., 1997 p. 529).

Capabilities are dynamic when they provide firms with the ability to implement new strategies to adapt to changing market conditions (Teece et al., 1997). From a marketing strategy perspective, the dynamic capabilities view suggests that marketing resources or capabilities must be combined and integrated with other complementary capabilities to generate and sustain a competitive advantage (Menguc & Auh, 2006). Dynamic capabilities are embedded in a firm's managerial and organizational processes aimed at the creation, coordination, integration, reconfiguration or transformation of its resource position (Teece et al., 1997).

Several studies have taken a capabilities-based view to emphasize how capabilities created by the continual reconfiguration of existing resources can be deployed to create a competitive advantage (see Cavusgil, Seggie & Talay, 2007 for a thorough review). Nath et al. (2010) find that marketing capabilities dominate business performance and that these capabilities depend on the ability to understand customer needs and create long term relationships. Menguc and Barker (2005) suggest that the specific marketing resources of salespeople selling skills and intra-organization collaboration can be coupled to increase sales performance. Griffith, Noble and Chen (2006) introduce a model that demonstrates how knowledge resources can be combined with entrepreneurial proclivity to create a dynamic capability of market responsiveness which leads to increased firm performance. Lai et al.

(2010) demonstrate that logistic activities can be integrated with information technology resources to create advantage-creating "digitized bundles" that can lead to increased performance. Research on market orientation also suggests that the positive influence that market orientation has on firm performance is only visible when market orientation is coupled with firm innovativeness (Menguc & Auh, 2006). In this relationship, market orientation alone is not a distinctive capability and must in fact be bundled with complementary capabilities such as innovativeness to lead to a sustained advantage.

Furthermore, the efficient deployment of resources can also lead to improvements in an organization's ability to adapt to its competitive environment. Adaptability stresses the extent to which a firm can use a variety of organizational capabilities (Sanchez & Mahoney, 1996) to implement changes in its strategic position (Oktemgil & Greenley, 1997). A critical premise of the resource-based view of the firm is that flexibility and adaptability in buyer–seller relationships will assist in the speed and ease of responding to new technologies or market changes (Young, Sapienza & Baumer, 2003; Connor & Prahalad, 1996; Sanchez, 1995). Organizational adaptability involves a firm's ability to identify and capitalize both emerging markets and technological opportunities (Chakravarthy, 1992). Organizations enter into a "state of adaptation" when they achieve fit with their environment (Tuominen, Rajala & Moller, 2004). One of the strategic focuses for an organization to remain adaptable is its technological focus, which includes seeking new applications as well as implementing these applications (Tuominen, et al., 2004).

Despite the increased attention to the capabilities approach, to our knowledge no studies have investigated the antecedents, dimensions or outcomes of e-Marketing capability. With this in mind, our focus is placed on how bundling existing marketing and complementary resources can lead to a distinctive capability of e-Marketing that facilitates not only the ability to respond quickly in a turbulent environment, but also allows for rich interactions with customers leading to enhanced relationship outcomes and, ultimately, improved firm performance.

3. Conceptual model and hypotheses

In order to empirically test the interrelationships between several firm-level constructs, we develop a conceptual model that is guided by the market orientation, information systems (IS) and strategic management literatures. Given our emphasis on the IT-enabled capability of e-Marketing, we draw theoretic support from Melville, Kraemer and Gurbaxani (2004) integrative model of IT business value. This resource-based model, in addition to its emphasis on resource configuration, suggests that intermediate capabilities and business processes should be examined along with the moderating influence of competitive environment. Additionally, based on the premise that new capabilities are a form of innovation, our model is informed by a conceptual framework introduced by Lawson and Samson (2001) in the management literature. Their framework is based on the extensive innovation literature and case studies of the innovation capability of high tech firms. Within the marketing literature, Wilson and Daniel (2007) found qualitative evidence of the key elements of Lawson and Samson's framework in their case study research examining multi-channel transformation. Together, these two theoretically grounded and complementary frameworks provide a solid foundation for our proposed conceptual model.

As shown in Fig. 1, this study examines the formation of a key distinctive capability of e-Marketing by focusing on the key constructs of market orientation, technology orientation, customer relationship performance, and organization performance. The following is a description of these constructs and a discussion on their interrelationships.

3.1. e-Marketing capability

As stated earlier, e-Marketing capability represents a firm's competence in using the Internet and other information technologies

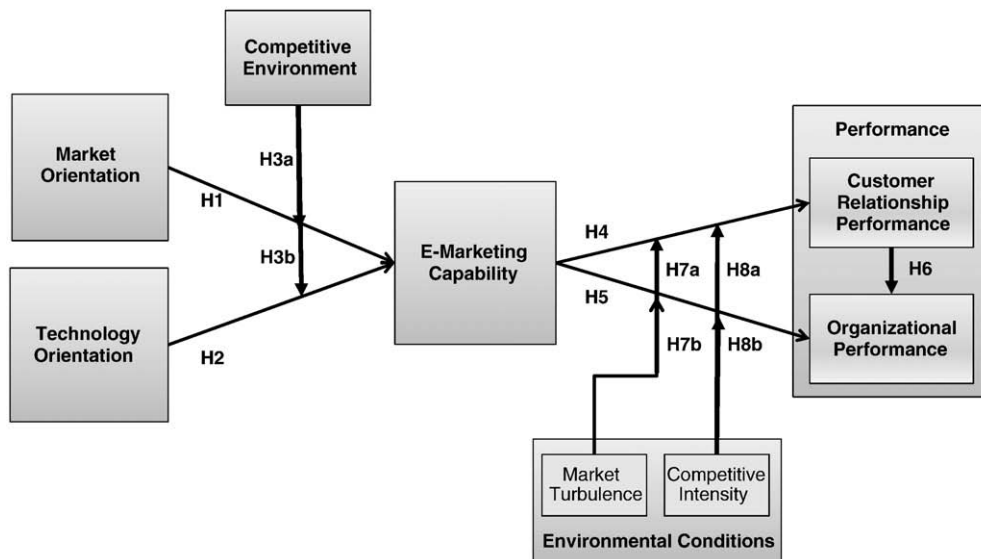


Fig. 1. Hypothesized model.

to facilitate rich interactions with customers. These interactions provide customers with access to firm resources and information while simultaneously providing the firm information about its customers. Consistent with Brodie et al.'s (2007) definition, e-Marketing technologies extend beyond Internet-based advertising and communications to include technologies supporting several marketing functions including customer relationship management, sales activity, customer support, marketing research and planning (Brady, Saren & Tzokas, 2002).

e-Marketing has the potential to create value in two ways. First, by providing a close connection to a company's business processes, e-Marketing provides customers with direct access to firm resources. One example of e-Marketing that connects customers to a firm's business process is found when a firm provides customized support extranets for its customers. Typically, these extranets give customers access to relevant support knowledge bases, product documentation, and electronic communications with engineers. In this regard, customers become tightly integrated with the company's product development lifecycle leading to much greater customer–firm information sharing and interaction. Not only does this extranet technology provide customers with a direct interface to firm resources, it provides product management with a rich set of information regarding customer demands and product usage. This form of information sharing plays a critical role in developing and maintaining strong customer relationships (Jayachandran et al., 2005).

e-Marketing capability also creates value by enabling employees to improve their focus on the customer by synchronizing activities and information throughout the organization. Valuable, outside-in information can be integrated with other customer records to improve overall sales productivity and organizational efficiency (Kim & Jae, 2007). Additionally, this valuable customer information can be used by marketers looking to better understand their customers' expressed and latent needs (Slater & Narver, 1999). While our example highlights how technology is used as an interface to customers, our emphasis is not on the technology itself. We focus instead on how the technology is fused with the firm's business processes and how the information derived from the technology is integrated and accessed throughout the organization to enhance relationships with customers (Jayachandran et al., 2005).

To support our conceptualization of e-Marketing capability, we draw from Melville's resource-based framework that describes how information technology resources must be integrated with complementary organizational resources to create a competitive advantage. This

framework is empirically supported by past studies. For example, Bharadwaj (2000) finds that a firm's information technology (IT) infrastructure, IT human resources, and IT-enabled intangibles (such as corporate culture and environmental orientation) create a firm-wide capability when used in combination with each other. Moreover, IT resources have also been shown to contribute to improved performance only when used in concert with complementary human and business resources (Powell & Dent-Micallef, 1997).

Based on extant literature on IT capability, we conceptualize e-Marketing capability as a multidimensional construct comprised of three critical and complementary resources: IT resources, human resources and business resources. IT resources refer to the deployment of technology infrastructure supporting e-Marketing initiatives. Human resources represent managerial support for technological initiatives and an organizational culture that embraces these initiatives. Finally, the business resource dimension captures the extent to which the technology is integrated throughout the organization. Importantly, as we present the dimensions of e-Marketing capability to be highly intertwined, we expect similar empirical results across all dimensions; therefore we treat the construct as a second-order latent construct consisting of these three critical dimensions.

The first dimension, IT resources, represents a firm's implementation and usage of a specific set of e-Marketing technologies that can facilitate rich dialogs and interactions with customers. This set of technologies includes: e-commerce websites that offer sales transactions, intranets, extranets, customer relationship management systems and sales force automation. The term *e-business adoption* has been used to describe a firm's implementation of these types of technologies and has a positive influence on the performance outcomes of customer satisfaction, sales performance and relationship development (Wu et al., 2003). Moreover, e-business adoption also suggests that e-business positively contributes to these outcomes by improving communication processes, enabling higher intensity and quality interactions, and by increasing information sharing. Information technology resources has been shown to play an important role in establishing durable relationships with customers both directly, by establishing effective direct interfaces with customers (e.g., via extranet technologies), and indirectly, by enhancing the performance of the various boundary-spanning roles found throughout the organization (e.g., via CRM and SFA). Based on this evidence, we include IT resources as a critical dimension of e-Marketing capability.

Human resources, the second dimension of e-Marketing capability, have been shown to play a significant role in the ability to generate value from information technology implementation (Henderson &

Venkatraman, 1993; Powell & Dent-Micallef, 1997; Srinivasan, Lilien & Rangaswamy, 2002; Wu, et al., 2003). Henderson and Venkatraman (1993), argue that successful technology implementation requires the support of top executives who are committed to the new technology and can provide visionary leadership and clearly articulate the need for the technology across the organization. Another complementary human resource is an open and flexible organizational culture that embraces the new technology and supports the integration throughout the organization (Wu et al., 2003). In developing their innovation capability model, Lawson and Samson (2001) also propose that “the appropriate culture and climate within the organization is vitally important for innovation success” (p. 394). Further research posits that innovative companies have employees that are not only open to implementing new processes, but are also open to finding out what works and making the necessary modifications to improve the process (Wilson & Daniel, 2007). Additionally, in an e-commerce context, having an open and flexible culture leads to increased e-commerce performance (Saini & Johnson, 2005).

The final dimension of e-Marketing capability is business resources. Powell and Dent-Micallef (1997) view management’s plan to integrate a new capability into the overall business process of a firm as a form of business resource; this was supported by empirical evidence that suggested that IT strategy is critical to the success of new information technology initiatives. In their study of IT deployment amongst retailers, they define IT strategy as the “integration of IT planning with the overall goals, strategies, and strategic planning processes of the firm... an attempt to fit IT into strategic objectives rather than adopt ITs for their own sake” (p. 384). The importance of this form of business resources for a new capability is echoed by Lawson and Samson (2001) who suggest that successful development of capabilities can occur only in the presence of a “clear articulation of a common vision and the firm expression of the strategic direction” (p. 389) and that such strategy is critical in directing organizational attention. Wilson and Daniel (2007) found qualitative support for this element of the innovation capability model and cited the importance of integrating new capabilities into existing processes for supporting multi-channel customer relationships.

The following discussion outlines the conceptual model for this research. Market orientation and technological orientation of the firm are hypothesized as antecedents of e-Marketing capability. Both customer relationship performance and organizational performance are presented as outcomes of successful e-Marketing capabilities. This research suggests that e-Marketing is a dynamic capability, therefore it is important to include the role that changes in the competitive environment play in the success or failure of an organization’s e-Marketing success. The competitive environment – comprised of customer power and normative pressures (Wu et al., 2003) – is presented here as a moderating factor for how well an organization is able to develop its e-Marketing capabilities. Environmental factors, such as market turbulence and competitive intensity, are presented as a potential interaction effect for e-Marketing’s ability to drive performance.

3.2. Market orientation

From a capabilities-based perspective, market orientation refers to a firm’s capability to sense and respond to customer requirements (Day, 1994). Today’s conceptualization of market orientation represents a specific firm-level resource that enables organizations to sense marketplace requirements and develop other capabilities that connect the organization to its external environment (Day, 1994; Slater & Narver, 1999; Song et al., 2007). Research suggests that market-oriented firms possess the cultural characteristics that enable them to diagnose their current capabilities, anticipate future capabilities and redesign processes to support new ones (Day, 1994). Hooley et al. (2005) found support for this view and propose that the value of market orientation lies in both its direct impact on marketing

activities and “through its pervasive influence on other managerial functions” (page 25).

As a resource, market orientation is a deeply embedded cultural resource which positively influences the development of marketing capabilities. Therefore, market orientation is viewed as a critical antecedent to the development of e-Marketing capability. As defined by Narver and Slater (1990), market orientation consists of three components: (1) customer orientation, (2) competitor orientation, and (3) interfunctional coordination. The core principle underlying the market orientation construct is that customer-related activities are the manifestation of organizational beliefs and culture. This conceptualization supports our arguments that a firm’s market-oriented culture drives its development of e-Marketing capabilities.

The capabilities-based view is based on the concept that capabilities and resources are continuously reconfigured and bundled together to create new capabilities. This perspective parallels a definition of innovation that is commonly used in the marketing literature which conceives innovation as the introduction of new processes, products or ideas in the organization (Hult, Hurley & Knight, 2004; Hurley & Hult, 1998). In a similar vein, innovativeness as a firm-level capability reflects a firm’s inclination to engage in innovative behavior (Han, Kim & Srivastava, 1998). Based on this, developing e-Marketing capabilities within an organization is a form of organizational innovation. Within the marketing literature, innovation has been an often-studied consequence of market orientation (Kirca, Jayachandran, & Bearden, 2005).

Our multidimensional conceptualization of e-Marketing capability as an integration of business, human and information technology resources provides further support that market orientation is a critical prerequisite to e-Marketing capability. Wu et al. (2003) found that the level of adoption intensity is higher for firms that are customer-oriented. The authors suggest that customer-oriented firms focus their efforts and resources on “innovations that facilitate efficient transactions and robust customer relationships” (p. 430). Furthermore, competitor-oriented firms are also likely to adopt and implement e-business initiatives. With regards to the human resource dimension of the e-Marketing capability construct, the market orientation literature demonstrates a positive relationship between market orientation and employee consequences such as the motivation of employees to satisfy customer needs (Kirca et al., 2005). Thus, our culturally-focused view of market orientation serves as a foundation for our notion that market-oriented firms will exhibit an openness and flexibility towards the development of new capabilities that establish tight and durable linkages with customers. Based on the theoretic and empirical support, we hypothesize that:

H1. Market orientation is positively related to e-Marketing capability.

3.3. Technology orientation

Technology orientation represents a firm’s capability in recognizing and adapting to emerging technologies (Gatignon & Xuereb, 1997; Zhou, Yim, and Tse 2005). Technologically-oriented firms tend to invest more in R&D and foster a commitment to the application of new technology within the organization (Gatignon & Xuereb, 1997). Both market and technology orientations encourage openness to new ideas. The key difference, however, is how and where the new ideas originate. While a market orientation tends to represent a customer-pull philosophy, a technology orientation can be viewed as a philosophy of “technological push” (Zhou et al. 2005) favoring the application of new technologies (Gatignon & Xuereb, 1997).

The implementation of new technologies within the firm is a key component of our conceptualization of e-Marketing capability. This view suggests that customer-linking is inherently a “technology-based” innovation (Zhou et al. 2005) in that the adoption of new technologies is critical to establishing e-Marketing capability. A positive relationship exists between technology orientation and

technology-based innovation (Zhou et al. 2005). Similarly, additional research suggests that a positive relationship between technological opportunism — a firm's capability of sensing and responding to new technologies — and technology adoption are also positively related (Srinivasan, Lilien & Rangaswamy, 2002). This research also found a positive relationship between top management advocacy towards new technology and technological opportunism. As stated earlier, our model suggests that top management team commitment is a complementary human resource that is a necessary element of e-Marketing capability development. These studies suggest that technology orientation can positively influence the technology, human and business resources that represent our conceptualization of e-Marketing capability. Therefore, we posit that:

H2. Technology orientation is positively related to e-Marketing capability.

3.4. Moderating influences of competitive environment

As previously stated, a firm's ability to adapt in its competitive environment depends on its deployment of its resources and capabilities. Understanding the external environment is an essential part of strategic planning. The external environment involves obtaining feedback from multi-directional shareholders including both customers and suppliers. In some instances, the reaction to these external voices may impact an organization's decision to adopt e-Marketing strategies. Firms that adopt a market orientation must be aware of both their competitive and their customer environment. By constantly monitoring changes in these dynamic environments, organizations can gain awareness of opportunities for greater access to new markets as well as advancements in technological initiatives made by competitors (Rapp, Rapp & Schillewaert, 2008). Managers may perceive that not responding to these changes in the business environment might make their customers and suppliers perceive them as lagging or stagnant (Srinivasan, et al., 2002). Organizations and customers that adopt e-Marketing capabilities will want to work with other firms who share these capabilities.

Furthermore, e-Marketing provides a unique channel for organizations to communicate with both suppliers and customers. In some instances many suppliers, as well as customers, demand that their channel partners implement e-Marketing to simplify communication as well as the transaction process. By not sharing in e-Marketing capabilities, firms risk the loss of the relationship with their suppliers and customers, as well as the loss of social legitimacy in their competitive environment (Rapp, et al., 2008). Therefore, the pressures of external stakeholders such as suppliers and customers will encourage the adoption and development of e-Marketing capabilities.

H3a. Competitive environment has a positive moderating effect on the relationship between market orientation and e-Marketing capability.

H3b. Competitive environment has a positive moderating effect on the relationship between market orientation and e-Marketing capability.

3.5. Relationships between e-Marketing capability and performance outcomes

Our conceptualization of e-Marketing capability suggests that we examine two performance outcomes: customer relationship performance and organization performance. Customer relationship performance in this study focuses on customer retention and satisfaction whereas organization performance is a broader view of overall firm health. Not only do we expect e-Marketing capability to relate positively to each of these performance outcomes, extant literature suggests a relationship between these two outcomes (Day & Wensley, 1988).

The customer relationship management literature stream suggests that technological advances have enabled organizations to interact with customers more effectively and efficiently than ever before (Ahearne,

Jelinek & Rapp, 2005; Coviello et al., 2001). Jayachandran et al. (2005) extend this view and suggest that technology serves as a resource to support the implementation of relational information processes. According to the authors, relational information processes “systematize the capture and use of customer information” thereby leading to quick and effective responses to customers (p. 178). Furthermore, they establish that relational information processes are positively associated with customer satisfaction and retention. In other research examining the effects of technology implementation, Wu et al. (2003) argue that e-business adoption enables more intense and higher quality interactions with stakeholders and increases the information provided to customers. Accordingly, they find that e-business adoption significantly influenced customer satisfaction and relationship development.

Based on our position that e-Marketing capability emphasizes the integration and accessibility of customer information from customer-facing technology and processes, we argue that firms possessing such a capability will be more effective in leveraging this information to better serve their customers. From this logic, and parallel with past studies, we hypothesize:

H4. e-Marketing capability is positively related to customer relationship performance.

Past research suggests that developing distinctive capabilities can be a source of superior organizational performance (Day, 1994; Griffith, et al., 2006; Menguc & Barker, 2005). Firms adept at converting existing resources and capabilities into new value-generating processes and abilities are likely to benefit from improved performance. Within this context, e-Marketing capabilities are expected to have a positive impact on performance by placing a dual emphasis on revenue generation through increased customer satisfaction while also reducing costs through increased efficiency (Rust, Moorman & Dickson, 2002). This view is supported by the meta-analytic review of the market orientation literature (Kirca et al., 2005) as well as literature focusing specifically on adoption of e-business innovation (Wu et al., 2003). According to the authors, the adoption of e-business technologies increases efficiency related to customer communications and internal administration. Therefore, firms possessing a higher degree of e-Marketing capability should realize better organization performance overall. From this we posit that:

H5. e-Marketing capability is positively related to organization performance.

Past marketing literature argues that as companies develop, maintain, and enhance company–customer relationships, increases in revenue and profit will be achieved. Metrics such as customer satisfaction and loyalty are viewed as critical predictors of future sales growth and other performance measures (Ahearne et al., 2005; Day & Wensley, 1988). High levels of customer satisfaction and retention can lead to increased revenues via cross-selling and positive word-of-mouth communications which also contributes to firm profitability (Hogan et al., 2002). Also, as customers become more satisfied and stay with a particular firm, higher market share can be gained and lower costs incurred by encouraging customer repeat purchase behavior and lower levels of customer complaints (Szymanski & Henard, 2001).

Accordingly, parallel with past research, we argue that higher profitability, better cost positions and better returns on investment will be evident with firms that achieve high levels of customer retention and satisfaction. Thus:

H6. Customer relationship performance is positively related to organization performance.

3.6. Moderating influences of environmental conditions

A firm's capability in recognizing and adapting to emerging technologies is conditioned by the nature of its market turbulence.

According to Wu et al. (2003), customer-facing information technology systems enable firms to gather market information and adjust strategy more when market-related uncertainty is high than when markets are stable. Furthermore, in such uncertain environments, the adoption of customer-facing information technology “would enable the businesses to react quickly and efficiently to changes in customer preferences and demand” (p. 434). Environmental turbulence, viewed as the unpredictability of market activities, positively influences the level of utilization of new business technology, specifically CRM, within a firm (Kim & Jae, 2007). In highly turbulent environments, firms are more likely to adapt to their competitive environment and achieve advantage by acquiring resources earlier than competitors.

Past research has acknowledged that the effectiveness of a firm's market-sensing capability is influenced by the nature of its market and competition (Gatignon & Xuereb, 1997; Kirca et al., 2005; Kohli & Jaworski, 1990). Firms residing in turbulent markets tend to make more adjustments and adaptations based on the information they process than do firms operating in stable markets (Kim & Jae, 2007). It has been argued that firms adapt to rapidly changing market environments through the introduction of technical and administrative innovations which leads to higher levels of performance (Han et al., 1998). As previously mentioned, we view e-Marketing capability as a form of innovation. In light of this view, such an innovation represents an effective means to deal with the turbulence in the external environment. Because we forward the premise that market-sensing capabilities allow firms to accurately anticipate changes in their markets and develop appropriate responses, we expect the relationship to appear even stronger in turbulent environments, thus having a higher impact on performance.

Therefore, we hypothesize that:

H7a. Market turbulence has a positive moderating influence on the relationship between e-Marketing capability and customer relationship performance.

H7b. Market turbulence has a positive moderating influence on the relationship between e-Marketing capability and organizational performance.

The market orientation literature recognizes competitive intensity, the degree of competition that a firm faces, as a facet of the environment that influences how firms leverage resources to adapt to their environments (Gatignon & Xuereb, 1997; Kirca et al., 2005; Kohli & Jaworski, 1990). Kirca et al. (2005) reveal that past studies examining the effects of competitive intensity have been inconclusive thus far. However, the author's meta-analytic review only examines the effects of competitive intensity on the market orientation–performance relationship and did not consider its effect on the market orientation–innovation relationship which is critical to the current study. Wu et al. (2003), suggest that a firm's fear of being left behind by its competitors may encourage the firm to adopt innovations already adopted by its rivals. The authors argue that normative pressures exerted from the competitive environment intensify e-business adoption. Specifically, they find support for their proposition that normative pressure significantly influences the adoption of technology related to communication, internal administration and order-taking, which are among the technologies examined in the current study.

Furthermore, as competition intensifies, firms must employ proactive and bold initiatives to adapt accordingly. In highly competitive environments, companies must strive to innovate, explore new markets, and look for novel ways of differentiating themselves (Zahra, 1993). For example, firms that have high levels of exploration involve themselves in activities such as risk taking, discovery, and most importantly, innovation (Slater & Narver, 1995). Competitive intensity was found to have a positive moderating effect on firms with high levels of exploration and firm performance (Auh & Menguc, 2005). Since, e-

Marketing and exploration are both founded in principles of innovation, we expand on this research by introducing competitive intensity as having an interaction effect with e-Marketing and firm and customer performance. We suggest that in highly competitive environments firms are particularly sensitive to implementing capabilities that enhance customer and firm performance. Historically, competitive intensity has been shown to influence organization's drive to create dynamic capabilities. This is extending that framework by also suggesting that competitive intensity drives organizations to deploy these innovative resources, such as e-Marketing capabilities, to improve performance in the competitive environment.

H8a. Competitive intensity has a positive moderating influence on the relationship between e-Marketing capability and customer relationship performance.

H8b. Competitive intensity has a positive moderating influence on the relationship between e-Marketing capability and organizational performance.

4. Method

4.1. Sample

Data for this study were collected from members of top management teams in firms crossing a broad spectrum of industries located in Belgium. The contact person at each firm identified themselves as a member of the top management team (~95%), with the majority of the respondents categorizing themselves as the chief executive officer of the organization (or an equivalent position) (~62%), or a business unit or operational vice-president who worked as a chief decision maker (~34%), and in close proximity to the CEO. We believe that these respondents portray an accurate representation of the organization. Members of the top management teams are considered to be a strong representation of the ideas and values within an organization (Hambrick & Mason, 1984).

A random sample of 1500 Belgian organizations was contacted to complete the survey and was representative of a wide range of sizes and types of businesses located in Belgium. Of the firms contacted, 522 provided full and complete data for a 34.8% response rate. The survey assured respondents that individual responses would remain completely confidential and that only aggregate results would be reported. Responses were received over a two-month time frame. Tests were conducted to rule-out any potential non-response bias by comparing early to late responders on all study variables and demographics. Organizational respondents represented a wide array of industries and size. Industries represented included industrial, technology, financial, and media among others and firm size varied between less than five employees to over 1000. Over 62% of the respondents' ages were between 35 and 54 years of age. Most companies sold goods (54.5%) whereas 26.0% were in the service industry and 19.5% classified their organization as both.

4.2. Measures

All multi-item scales used within this research were developed and adopted from previous scales used in past survey research studies. The means, standard deviations, and correlations for the latent constructs are detailed in Table 1 and individual scale items are provided in Table 2.

The multidimensional construct of *e-Marketing capability* was measured by using an adapted version of an instrument used by Powell and Dent-Micallef (1997). Scale items were anchored at 1 (Strongly Disagree) to 7 (Strongly Agree). The original version of the instrument was used to assess items related to the implementation of information technology in a retail setting. For this study, the scales were modified to refer to the specific initiatives of e-Marketing. Consistent with Powell and Dent-Micallef, the human resources construct (six items)

Table 1
Correlation of 1st order latent constructs.

| | | Mean | Stan dev | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|-----------------------------------|------|----------|-------|-------|--------|-------|--------|--------|-------|---|
| 1 | Market orientation | 4.92 | 1.03 | 1 | | | | | | | |
| 2 | Technology orientation | 4.13 | 1.43 | 0.562 | 1 | | | | | | |
| 3 | Competitive environment | 3.20 | 1.27 | 0.221 | 0.291 | 1 | | | | | |
| 4 | e-Marketing capability | 3.80 | 1.43 | 0.373 | 0.454 | 0.610 | 1 | | | | |
| 5 | Customer relationship performance | 5.13 | 0.99 | 0.400 | 0.281 | −0.048 | 0.163 | 1 | | | |
| 6 | Organizational performance | 4.57 | 1.05 | 0.265 | 0.235 | 0.064 | 0.026 | 0.350 | 1 | | |
| 7 | Competitive intensity | 4.98 | 1.32 | 0.121 | 0.025 | 0.034 | 0.062 | −0.029 | −0.118 | 1 | |
| 8 | Market turbulence | 4.53 | 1.34 | 0.056 | 0.068 | 0.119 | 0.034 | −0.008 | −0.049 | 0.347 | 1 |

Correlations (>0.110) are significant at the 0.05 level (2-tailed).

represents a composition of elements such as culture, top management commitment and communication. The human resources and business resources (three items) dimensions both demonstrated strong reliability ($\alpha=0.92$ and $\alpha=0.94$ respectively). To capture the IT resource dimension, respondents were asked to indicate the adequacy of the technological infrastructure and the dedication of the appropriate resources to support e-Marketing implementation. The reliability of IT resources (three items) was found to be of $\alpha=0.91$.

Conceptually, the human, business and IT dimensions are all necessary to capture the nature of the e-Marketing capability construct. Accordingly, we treated the measure as a second-order construct with the three resource dimensions serving as first-order constructs. Recent studies in IS and marketing have modeled complex constructs such as this as second-order factor models rather than a set of correlated first-order factors (Diamantopoulos, et al., 2008; Stewart & Segars, 2002; Zhu & Kraemer, 2005). This approach is appropriate when “the intercorrelations among first-order factors form a system of interdependence (or covariation) that is itself important in measuring the construct” (Stewart & Segars, 2002, p. 39). Our conceptualization of e-Marketing capability suggests that each resource should not be measured in isolation but instead should be treated as integrative measures capturing both the measures of the resources and the structure of interrelationships among these resources. The second-order construct created as an overall measure of e-Marketing capability was found to be reliable (i.e., composite reliability = 0.95).

Market orientation was measured using an adapted version of the Narver and Slater (1990) measurement instrument. Respondents responded to items relating to the organization's focus on customer orientation (6 items) ($\alpha=0.89$), competitor orientation (4 items) ($\alpha=0.86$), and interfunctional coordination (5 items) ($\alpha=0.86$). All Likert scale items were anchored at 1 (Strongly Disagree) to 7 (Strongly Agree). Similar to the above scale measurement, we treated the market orientation construct a second-order construct with the three separate dimensions serving as first-order constructs. The second-order construct created as an overall measure of market orientation was found to be reliable (i.e., composite reliability = 0.82).

Technology orientation was measured with a four-item version of Gatignon and Xuereb's (1997) scale. Similar to market orientation, scale items were anchored at 1 (Strongly Disagree) to 7 (Strongly Agree) and the scale demonstrated strong reliability ($\alpha=0.91$).

Competitive environment was measured with a five-item measure stemming from the work of Wu et al. (2003) and Srinivasan et al. (2002). Although termed differently throughout the extant literature (external, normative, and institutional pressures), the commonality of these measures is the assessment of factors external to a firm that may lead them to adopt e-Marketing capabilities either currently or in the future. The scale demonstrated strong reliability ($\alpha=0.87$).

Customer relationship performance was adapted from scales used by Rust et al. (2002). Respondents were asked to answer, “relative to your firm's stated objectives, how is your firm performing on”: (1) customer satisfaction, and (2) customer loyalty. All Likert scale items were anchored at 1 (Worse) to 7 (Better). The reliability was found to be $\alpha=0.82$ for these two customer items.

Organization performance was measured as return on investment, cost position and profitability (Moorman & Rust, 1999). These were measured as the top management teams' assessment of their organization relative to those with which they compete. Relative performance is used to control for performance differences among different industries and markets served (Slater & Narver, 1994). The reliability of organization performance (three items) was found to be of $\alpha=0.83$.

Environmental moderators were measured with shortened scales developed by Jaworski and Kohli (1993), market turbulence was measured using two items ($\alpha=0.72$) which assessed the extent to which the composition of customers and preferences of an organization changed over time. Competitive intensity (three items) tapped the level of competition within a particular market and demonstrated strong reliability ($\alpha=0.76$).

4.3. Analytical strategy

In order to take advantage of the benefits offered from the use of structural equation modeling and to enable the modeling of both formative and reflective constructs in the empirical test of our conceptual framework, we adopted a Partial Least Squares (PLS) approach. PLS analysis is a statistical approach to simultaneously estimate parameters of a structural equation model (SEM), which was introduced by Wold (1975). It is a variance-based technique that focuses on maximizing the variance of the dependent variable explained by the independent variables in the model. This approach is different from the one applied in the more widely known covariance-based method that “attempts to minimize the difference between the sample covariance and those predicted by the theoretical model” (Chin & Newsted 1999, p. 309).

PLS has many advantages over covariance-based SEM, including the ability to robustly handle more descriptor variables, while providing more predictive accuracy and a much lower risk of chance correlation. The major limitations are a higher risk of overlooking real correlations and sensitivity to the relative scaling of the descriptor variables; however, these are more conservative approaches to model estimation.

To test our proposed relationships, we first fit a linear effects model that amounts to the hypothesized model depicted in Fig. 1, minus the interactions (i.e., H3a,H3b, H7a,H7b, and H8a,H8b). This model was fit in order to examine the measurement properties of our model and to test the linear relationships present in our model. Next, to test the interaction effects, we followed the two-step score construction procedure suggested by Chin, Marcolin, & Newsted (2003) for formative constructs. First we used the formative indicators in PLS to create an underlying construct score for both the predictor and moderator variables. We then used those scores to calculate a single composite construct score which would then be entered into the model as the interaction variable. The same procedure was followed for all of the multiplicative interactive terms found in our analyses. This application, in conjunction with the PLS procedure to estimate the underlying interaction construct, is recommended by past researchers because the formative nature of several of our constructs

Table 2

Factor loading, AVE, and reliabilities.

| | | | |
|---|-------|-----------------------|------|
| <i>Item and construct reliability for customer orientation</i> | | | |
| We regularly follow and analyze the needs of our customer | 0.737 | Cronbach's alpha | 0.89 |
| Our company objectives are determined by customer satisfaction | 0.689 | Composite reliability | 0.91 |
| Our strategy to achieve a competitive advantage is based on the comprehension of customer needs | 0.840 | AVE | 0.62 |
| We measure customer satisfaction on regular base | 0.851 | | |
| Our companies strategies have the objective to create as possible for our customers | 0.781 | | |
| We spend a lot of attention towards the after sales service | 0.799 | | |
| <i>Item and construct reliability for competitor orientation</i> | | | |
| We react quickly to the actions of our competitors | 0.901 | Cronbach's alpha | 0.86 |
| In our company, sales people share a lot of information about the competition | 0.871 | Composite reliability | 0.94 |
| We focus on costumers and market segmentations where our competitors are ahead | 0.862 | AVE | 0.78 |
| Our top management often discusses the strengths and weaknesses of our competitors | 0.899 | | |
| <i>Item and construct reliability for interfunctional coordination</i> | | | |
| Information about our customer is communicated freely throughout the company | 0.876 | Cronbach's alpha | 0.86 |
| Different company functions work in a integrated fashion to fulfill the needs of our objectives | 0.869 | Composite reliability | 0.86 |
| Managers understand how employees from all functions can contribute to deliver 'customer value' | 0.901 | AVE | 0.65 |
| We share "resources" between different business units | 0.701 | | |
| Managers from different company functions visit customers regularly | 0.683 | | |
| <i>Item and construct reliability for second-order market orientation</i> | | | |
| Customer orientation | 0.626 | Cronbach's alpha | 0.75 |
| Competitor orientation | 0.701 | Composite reliability | 0.82 |
| Interfunctional coordination | 0.988 | AVE | 0.62 |
| <i>Item and construction reliability for technology orientation</i> | | | |
| Our company has a large, strong network of technology providers | 0.826 | Cronbach's alpha | 0.91 |
| We have a better technological knowledge than our suppliers | 0.587 | Composite reliability | 0.87 |
| Our new product is always state of the art technology based | 0.810 | AVE | 0.62 |
| Our company is proactive in the development of new and technologies and customer applications | 0.904 | | |
| <i>Item and construct reliability for first-order human resources</i> | | | |
| Our e-Marketing plans are integrated into our overall business plan | 0.868 | Cronbach's alpha | 0.92 |
| We have developed and e-Marketing culture within our organization | 0.875 | Composite reliability | 0.94 |
| Our top management fully supports our e-Marketing activities | 0.814 | AVE | 0.71 |
| As top management, we have clearly shown our involvement concerning e-Marketing | 0.814 | | |
| We have few problems to fit e-Marketing in the culture of our company | 0.867 | | |
| <i>Item and construct reliability for first-order business resources</i> | | | |
| There are set clear priorities for our technology projects | 0.940 | Cronbach's alpha | 0.94 |
| We regularly measure the effectiveness and the success of our technology projects | 0.958 | Composite reliability | 0.96 |
| Our technology plans are integrated into our overall business plan | 0.933 | AVE | 0.89 |
| <i>Item and construct reliability for first-order technology resources</i> | | | |
| We have formal strategic plan for e-Marketing | 0.931 | Cronbach's alpha | 0.91 |
| There are set if clear priorities for our e-Marketing projects | 0.932 | Composite reliability | 0.94 |
| We measure on a regular basis the effectiveness and the success of our e-Marketing projects | 0.889 | AVE | 0.84 |
| <i>Item and construct reliability for second-order e-Marketing capability</i> | | | |
| Technology resources | 0.893 | Cronbach's alpha | 0.92 |
| Human resources | 0.955 | Composite reliability | 0.95 |
| Business resources | 0.931 | AVE | 0.86 |
| <i>Item and construct reliability for competitive environment</i> | | | |
| Our supplies strongly urge us to adopt e-business | 0.777 | Cronbach's alpha | 0.87 |
| Our customer strongly insists that we implement e-business | 0.817 | Composite reliability | 0.90 |
| We invest in e-business to stay ahead of our competition | 0.847 | AVE | 0.65 |
| Within the years, our suppliers will demand that conduct business via internet technologies | 0.802 | | |
| Within the years, our customers will demand that conduct business via internet technologies | 0.793 | | |
| <i>Item and construct reliability for customer relationship performance</i> | | | |
| Relative to your competitors, how well does your company perform on | | Cronbach's alpha | 0.82 |
| Customer satisfaction | 0.939 | Composite reliability | 0.92 |
| Customer loyalty | 0.909 | AVE | 0.85 |
| <i>Item and construct reliability for organizational performance</i> | | | |
| Relative to your competitors, how well does your company perform on | | Cronbach's alpha | 0.83 |
| Return on investment | 0.883 | Composite reliability | 0.90 |
| Cost position | 0.799 | AVE | 0.75 |
| Profitability | 0.915 | | |
| <i>Item and construct reliability for market turbulence</i> | | | |
| Our market surroundings are liable to many changes | 0.730 | Cronbach's alpha | 0.72 |
| In our industry the customer preferences change frequently | 0.975 | Composite reliability | 0.85 |
| | | AVE | 0.74 |
| <i>Item and construct reliability for competitive intensity</i> | | | |
| Competition is a characteristics of our industry | 0.921 | Cronbach's alpha | 0.76 |
| The competition in our industry is very high | 0.780 | Composite reliability | 0.89 |
| There are many "promotion" in our industry | 0.880 | AVE | 0.75 |

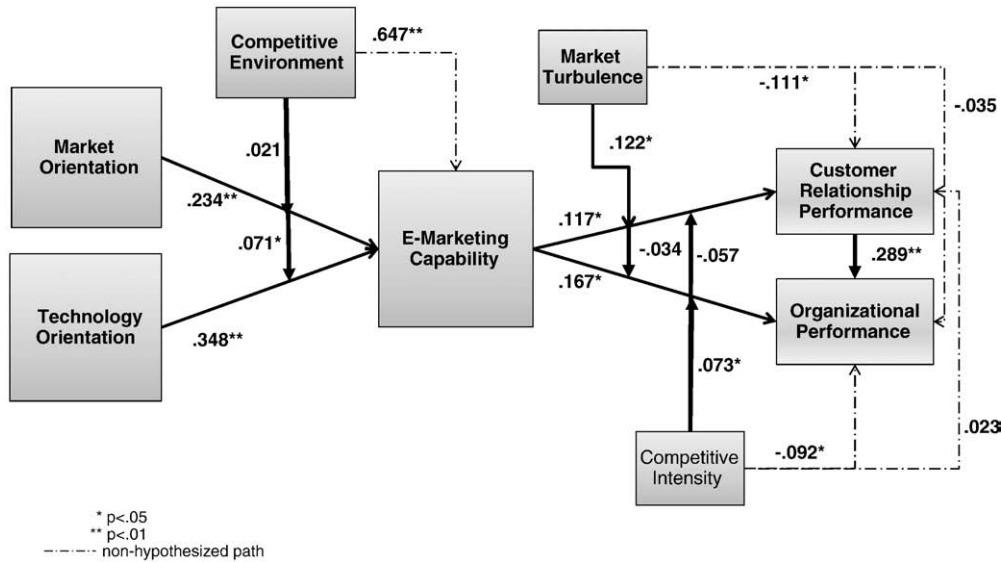


Fig. 2. Results of model.

would not necessarily permit the cross-products of indicators to tap into the true underlying interaction effect (Chin et al., 2003).

In order to determine the relative fit of a structural model using the PLS procedure, researchers must examine reliabilities and validities along with specific path significance and R -square measures because PLS does not provide specific measures of fit, per se. Following Hulland (1999), we examine and present the results of a series of statistical analysis to ensure that we have achieved measurement validity. As seen in Table 1, Cronbach's alpha, composite reliability and average variance extracted (AVE) indicated satisfactory reliability at the construct level. In addition, item and construct discriminant validity analysis suggested satisfactory validity levels for all constructs. All values can be seen in Table 2.

Finally, because all of the variables were collected from a single respondent per company, we conducted checks for common method variance. First, we used a CFA approach to assess Harman's one-factor test using AMOS 6.0. Based on our analysis, our measurement model fit yielded a chi-square of 3894.1 (961). By fitting a one-factor model, our fit was significantly worse with a chi-square of 9813.1 (989). Second, we employed the partial correlation procedure of including a marker variable (Griffith & Lusch, 2007; Lindell & Whitney 2001) that is not theoretically related to at least one other variable in the study. By using respondent age as the marker variable, we found no significant relationships to other variables in the model. These analyses indicate that our analysis is not subject to an inherent common method bias in the responses to the survey.

4.4. Evaluation of structural model and testing of hypotheses

To begin our structural equation analysis, we first examined the linear effects present in our model. We found support for all of the five hypothesized relationships (see Table 3). A firm's market orientation had a significant effect on their e-Marketing capability (H_1 : $\beta = 0.234$; $p < 0.01$) as did their technology orientation (H_2 : $\beta = 0.348$; $p < 0.01$). e-Marketing capability did then influence customer relationship performance (H_4 : $\beta = 0.117$; $p < 0.05$); as well as, organizational performance (H_5 : $\beta = 0.167$; $p < 0.05$). Finally, customer relationship performance demonstrated a significant relationship with organizational performance (H_6 : $\beta = 0.289$; $p < 0.01$). The linear paths described accounted for 26.9% of the variance in a firm's e-Marketing capability, 1.4% of their customer relationship performance, and 10.3% of their organizational performance (Fig. 2).

Next, we tested the direct effects of competitive environment, market turbulence and competitive intensity. Although these relationships were not hypothesized, it is necessary to include them when testing interaction effects. First we found competitive environment to have a significant direct effect on e-Marketing capability ($\beta = 0.647$; $p < 0.01$). We also found market turbulence to have a significant negative influence on customer relationship performance. ($\beta = -0.111$; $p < 0.05$). However, we did not find significant effects of market turbulence on organizational performance ($\beta = -0.035$) or for competitive intensity on either customer relationship performance ($\beta = 0.023$) or organizational performance ($\beta = -0.092$).

Third, we examined the interactive effects present in our framework. We first estimated the effect of competitive environment on market orientation and technology orientation. We did find a significant interactive effect of competitive environment on technology orientation ($H3b$: $\beta = 0.071$; $p < 0.05$), but did not find a significant moderating effect on market orientation ($H3a$: $\beta = 0.021$). We also examined the moderating influence of competitive intensity and market turbulence on the relationships between e-Marketing capability and the two performance measures. We found that market turbulence exerted a significant influence on the relationship between e-Marketing capability and customer relationship performance ($H7a$: $\beta = 0.122$; $p < 0.05$), but did not influence the relationship to organizational performance ($H7b$: $\beta = -0.034$). We also uncovered that competitive intensity did not exert a significant influence on the relationship between e-Marketing capability and customer relationship performance ($H8a$: $\beta = -0.057$), but did influence the relationship to organizational performance ($H8b$: $\beta = 0.073$; $p < 0.05$). On the structural model level, we assessed the

Table 3
Hypotheses results.

| | | |
|-------|---------------|---------|
| H_1 | Supported | 0.234** |
| H_2 | Supported | 0.348** |
| $H3a$ | Not supported | 0.021 |
| $H3b$ | Supported | 0.071* |
| H_4 | Supported | 0.117* |
| H_5 | Supported | 0.167* |
| H_6 | Supported | 0.289** |
| $H7a$ | Supported | 0.122* |
| $H7b$ | Not supported | -0.034 |
| $H8a$ | Not supported | -0.057 |
| $H8b$ | Supported | 0.073* |

* $p < 0.05$.

** $p < 0.01$.

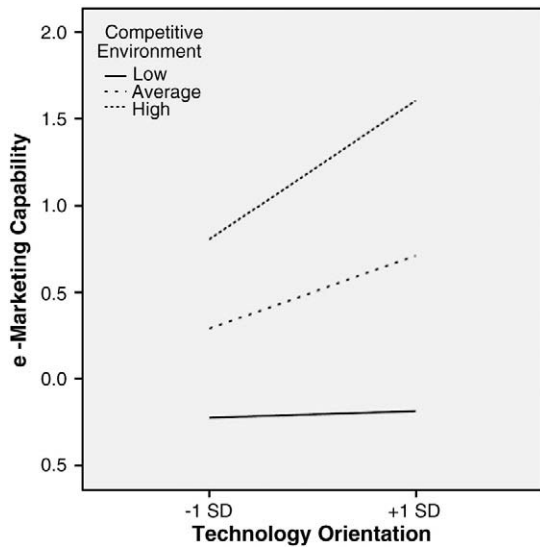


Fig. 3. Interactive effects of competitive environment on technology orientation to e-Marketing capability.

coefficient of determination R^2 , to determine overall model adequacy. With a value of 0.612 for e-Marketing capability, 0.038 for customer relationship performance, and 0.133 for organizational performance, the model's R^2 s indicate satisfactory explanatory power, considering the wide variety of factors potentially influencing firm capabilities and performance.

To interpret the nature of the interactions we plotted them using standard practices from moderated regression analyses (Cohen & Cohen 1983). Specifically, using the information from the initial model analyses, we plotted the relationship between technology orientation that correspond to the average, low (one SD below the mean) and high (one SD above the mean) values of the competitive environment moderator. The results using e-Marketing capability as a dependent variable appear in Fig. 3. By examining Figs. 4 and 5, the results for moderating effect of competitive intensity and market turbulence on e-Marketing capability can be seen. It is apparent across all three of the graphs that the moderating variables enhance the strength of the positive linear relationships, respectively.

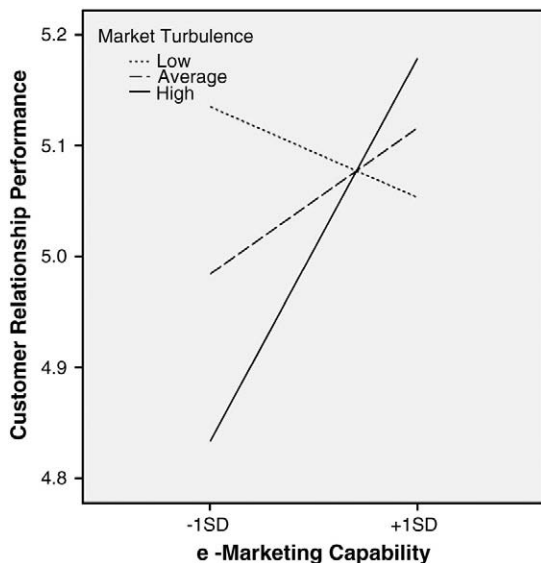


Fig. 4. Interactive effects of market turbulence on e-Marketing capability to customer relationship performance.

Finally, it was determined relevant to test the mediating properties of the framework presented. By including direct paths from market orientation and technology orientation to organizational performance while constraining all other paths to and from e-Marketing capability, we find that both market orientation ($\beta=0.143$; $p<0.05$) and technology orientation ($\beta=0.112$; $p<0.05$) have a significant influence on performance. By removing the constraint from e-Marketing capabilities to the organizational performance path, we see that the technology orientation to organizational performance relationship loses its significant value ($\beta=0.060$); while the market orientation relationship is weakened ($\beta=0.126$; $p<0.05$) it still retains its significance, thus demonstrating full mediation for technology orientation and partial mediation for market orientation.

5. Discussion

5.1. Discussion of empirical findings

As hypothesized, our findings suggest that the successful development of e-Marketing capabilities can have a direct influence on firm profitability, cost position and return on investment as well as an impact through enhanced customer relationship performance. These findings are consistent with past research that emphasizes a dual approach toward firm performance and suggests that e-Marketing can benefit firms by simultaneously expanding revenue (e.g., via increased customer retention and satisfaction) and reducing costs (e.g., increased organizational efficiency). Both market orientation and technology orientation are shown to be important drivers for the customer-centric capability of e-Marketing. These findings are consistent with past studies that showcase these constructs as important organizational “sense and respond” competencies that lead to innovation and the development of new capabilities.

An interesting finding within this research was the direct influence of competitive environment on e-Marketing capabilities. As we expected to find a moderating influence of this normative pressure, the direct effect was much stronger than anticipated. This finding leads us to believe that firms might be pressured to a greater degree by the external environment than from an internal directive. Although not tested within this framework, these external factors may very well be driving the firm's choice in strategy. It is quite possible that there are more complex relationships between these e-Marketing capability antecedents worth investigation. However, we did uncover the

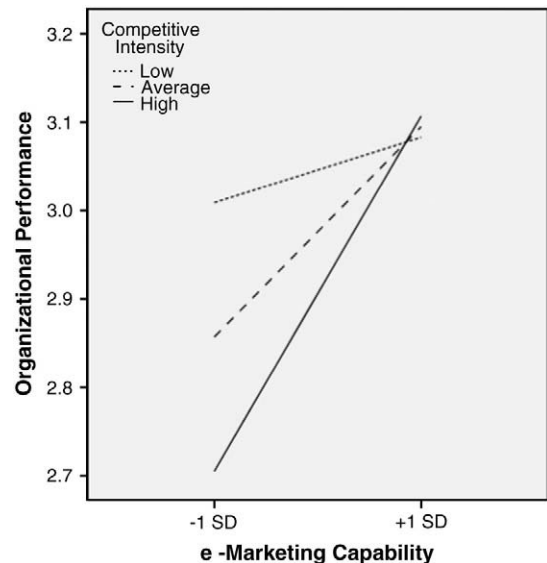


Fig. 5. Interactive effects of competitive intensity on e-Marketing capability to organizational performance.

moderating influence of competitive environment on technology orientation as well as the linear effect. This finding supports the premise that those firms which align their strategic orientation to the external environment will garner the greatest benefit.

Examining the environmental conditions of our study, competitive intensity and market turbulence, leads us to other interesting findings. Here again, linear effects were found that were not hypothesized. First, market turbulence was found to have a negative relationship with customer performance outcomes. Theoretically, this finding makes sense that in highly changing markets, customers' expectations and demands will be ever-changing as well; thus, making loyalty and satisfaction more difficult goals to achieve. Second, competitive intensity had a negative influence on organizational performance. Again, not surprising considering that as some industries are found to be more competitive than others, it will be more difficult to achieve organizational success as the competition increases.

Extending these linear effects to the moderating influences proposed by each of these environmental conditions, we uncover other interesting results. As described previously, e-Marketing capabilities have a positive influence on performance outcomes; whereas volatile environmental conditions have a negative effect. It is apparent, based on our research findings, that firms that have retooled themselves with these capabilities are actually more capable of navigating the turbulent business waters to achieve higher levels of success. It seems that in highly turbulent markets, firms are able to leverage their new capabilities to help foster rich interactions with customers. Similarly, in situations of intense competition, these capabilities are found to provide some form of competitive advantage over other firms within their industry.

5.2. Contributions

5.2.1. Theoretical implications

This study makes several important contributions to the marketing literature. First, we advance a model that demonstrates how the capability of e-Marketing can be formed by integrating complementary technology, human and business resources. To our knowledge there is currently no model to describe how market-driven firms develop the marketing capability of e-Marketing. Most of the work on marketing capabilities to date has primarily placed an emphasis on the outcomes of these capabilities and has paid less attention to their dimensionality and the resources necessary to create them as was done in this study. Our findings highlight the importance of integrating existing business, human and information technology resources to create a new capability that supports strong firm–customer interactions and linkages. These findings are consistent with the strategic management literature that examines the impact of information technology on firm performance. The capabilities-based view underlying our conceptual model suggests that competitive advantage is not achieved merely through the implementation of information technology since such resources are readily available by rival firms. Instead, we find support for the notion that competitive advantages can be achieved when these resources are combined and converted into complex, inimitable capabilities. An important implication of this finding is that even if e-Marketing technologies have “come of age” and are widely adopted by firms as suggested by Barwise and Farley (2005) and Brodie et al. (2007), competitive advantage may only be achieved if technology resources are properly combined with other complementary firm-level resources.

Second, this study contributes to the growing body of literature that suggests that a market-oriented philosophy is a necessary, but perhaps not sufficient, component of organizational success. While it is widely accepted that market orientation can lead firms to enhanced performance, the route to performance remains a topic for some debate. As Kirca et al. (2005) suggest in their revised model derived from past empirical studies, the market orientation–performance chain is mediated by innovativeness, customer loyalty and quality.

Our findings are consistent with this revised model in that e-Marketing capability is viewed as a form of innovation that leads to customer satisfaction and retention. Importantly, the market-sensing capability captured by the market orientation construct is shown to be a critical prerequisite to e-Marketing capability.

The implication that the dimensions of today's conceptualization of market orientation can be viewed as specific capabilities offers an exciting opportunity for researchers in this domain. Our findings provide further evidence that taking a capabilities-based approach while examining a market-oriented philosophy can reveal new insights into how firms can develop, integrate and deploy marketing capabilities to create a sustained competitive advantage. The extant marketing capabilities literature demonstrates the appropriateness of the capabilities-based view and provides a firm foundation from which this research is built. It is our hope that this study will invite the examination of other key marketing capabilities using the capabilities view as a guide.

Finally, by viewing marketing capabilities as a form of innovation, as was done in this study, researchers can leverage a rich body of the innovation and technology literature found in the management discipline. While a specific instance of a capability is selected for this study (i.e., e-Marketing), it is expected that this model can be useful for exploring how firms identify and develop other marketing-related capabilities. Further application of the innovation capability framework within the context of marketing capabilities is warranted.

5.2.2. Managerial implications

Today's managers are confronted with challenges that are analogous to reconfiguring an airplane while it is still in flight. Not only must they coordinate daily mainstream operations, but they must also continually cultivate and reconfigure resources to form new capabilities that provide a sustainable strategic position. Marketing managers, in particular, are uniquely positioned within their organizations to scan for opportunities to serve new markets while simultaneously identifying the capabilities that will enable their organizations to develop strong bonds with existing customers. The current study suggests that managers can foster durable relationships with customers through IT-enabled marketing initiatives. As found in past research, however, emphasis should not only be placed on the technology itself, but also on how the technology is fused with complementary business and human resources to create value.

While past studies have highlighted the benefits of capabilities, the literature has offered practitioners little guidance into how to identify, let alone develop, organizational capabilities that create competitive advantage. As managers are faced with a continual stream of challenges and changes in their environment, it becomes increasingly critical to sense these changes ahead of the competition and take necessary action to capitalize on the changes rather than merely react to them. This study offers insight into what organizational capabilities and complementary business resources are needed to identify and cultivate new processes that link the organization to its environment. Our findings suggest that managers should pay close attention to several types of resources when pursuing initiatives aimed at connecting customers to the firm's business processes. In addition to ensuring that the proper technology resources are dedicated to such efforts, managers should also cultivate innovative cultures that embrace and support the introduction of new processes. Additionally, managers should clearly articulate an overall vision for the new capability and how it will be integrated across the entire organization. This is critical since e-Marketing capabilities create value by integrating the information created during customer–firm interaction with all business processes that involve customers.

The finding that market orientation and technology orientation are necessary to develop value-creating linkages with customers provides more reason for managers to develop organizational cultures that seek to identify and respond to customers' explicit and latent needs. While managers are likely familiar with the concept of market orientation and how it can positively influence outcomes such as new product success, this study also highlights how customer satisfaction

and performance can be increased through IT-enabled interactions. This suggests that managers not only need to be aware of customers' primary product-related needs but they also need to be keenly aware of how their customers want or need to interact with the firm.

We also believe that it is critical for managers to be cognizant of their environment. As this may sound obvious, in many circumstances it is evident that firms do not align their strategies with the ever-changing surroundings and demands held by external stakeholders. It is widely recognized that firms who do not ensure that their strategy parallels that of their infrastructure and outside pressures will fail, yet the marketplace witnesses these behaviors on a regular basis.

Coupled with the above, managers must consider that the improved capabilities acquired by such positioning can improve performance. This finding is valuable; however, further investigation shows that these capabilities demonstrate even stronger effects in more turbulent, competitive industries. Thus, organizational leadership cannot simply plan-for-change, but rather, must engage in continuous process and capability improvement to stay ahead of the performance curve, or at a minimum, stay on the curve.

Our recommendation for firms is to constantly scan the environment and survey both internal and external stakeholders to garner intelligence about the competitive landscape. As we believe our findings imply, it is the expectations of these individuals that will shape the future marketplace. This market information will then enable senior leadership to develop the tools necessary for successful adaptation to the forthcoming change.

5.3. Limitations and areas for future research

The cross-sectional nature of this study provides only a snapshot in time which makes it difficult to fully understand the order of effects and we are, therefore, left to infer causality. Extant literature provides support for our model that views market and technology orientations as antecedents to e-Marketing capability. We did find theoretic support for an alternative model that views these constructs as moderators. Given that our testing procedure outlined here would yield the same results, we ultimately subscribed to the predominate view in the literature that suggests that these orientations are antecedents to capabilities and these relationships can be strengthened by factors such as competitor, supplier or customer pressure. Future research examining these constructs with longitudinal data can provide a richer understanding of the relationships between them. A second limitation concerns the fact that the survey responses all came from top managers. This limitation raises concerns about the influence of method bias in our results. Research incorporating secondary source data is warranted and can provide further insight into the capability development model. During our analyses we also revealed several interesting direct relationships that we did not originally hypothesize. Our findings suggest that an opportunity remains to explore these relationships in more detail and researchers are urged to validate these results with additional data collections.

Our resource-based conceptualization of e-Marketing begins to shed light on the question of why some firms realize more performance gains from e-Marketing initiatives than others. We believe, however, that this is only the first step towards a better understanding of how technology investments, particularly as they relate to marketing, can be fully leveraged. An important component of this understanding that remains to be explored is the relationship between firm resources and marketing practices. An opportunity remains to extend our work by integrating the contemporary marketing (CMP) framework offered by Coviello et al. (2002) and the CRM performance measurement framework (Kim & Kim 2009) to examine how various resource configurations influence marketing practices.

This work suggests several promising directions for future research. We hope that researchers can build from our model and begin to explore more of the relationships between the proposed constructs that lead to

the successful identification, development and measurement of critical marketing capabilities.

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