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Information technology impact on market orientation in e-business

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ABSTRACT

This study presents how information technology (IT) contributes to market orientation (MO). The authors analyze the way companies deal with market intelligence to facilitate the identification of customer needs and to generate the appropriate response to such needs. Research methodology includes multiple case studies of retail companies with e-business operations (the three largest in Brazil). The findings indicate that investment in interorganizational systems strongly supports the development of MO capabilities. The article develops a framework to help companies in assessing how IT applications support their MO behaviors; as an academic contribution, the study presents two hypotheses for future studies.

1. Introduction

Different sources of literature recognize the relevance of e-business for companies across the world. According to e-bit (a Brazilian research institute focused on e-commerce), the number of e-commerce users has grown 36% in 2007, going up from 7 million to 9.5 million. The growth of the Brazilian GNP did not exceed 5% in 2007, while the e-commerce sector grew 45% in the same period – representing more than US$ 3.5 billion in transactions.

Market orientation (MO) is a fundamental practice for an organization that intends to adapt its strategies to the market – to achieve better understanding of the market and more effective responses. According to Kohli and Jaworski (1990), MO means the generation and dissemination of market intelligence by the firm and its response to the market (responsiveness). Since managers have to strengthen the companies MO, the electronic channels and internet-based technologies facilitate market information gathering their internal dissemination through information systems (IS). IS support the strategic decision making process by ensuring greater agility, information availability, information security and interactivity. E-commerce technologies surpass the internal limits of organizations and exert direct impact on their attitude to the market and on their profitability by providing new solutions, widening access to consumers and allowing the emergence of new, previously unthinkable, business models. The implementation of IT in e-business context, undoubtedly, influences the development of distinct capabilities, including the way the company performs activities and manages external information, facilitating experimentation and innovation.

Based on these elements, this study aims to explore and describe how IT can contribute to strengthen MO in e-business by examining three case studies of retail companies in Brazil that make intensive use of IT and of e-business as strategic resources.

2. Information technology contributions to market orientation

2.1. E-business and IT strategies

According to Turban et al. (1999), e-business includes transactions carried out in electronic markets, services to consumers, collaboration with business partners and intra-organizational relationships. E-business is part of a wider economic context that is responsible for radical transformations in business and encompasses digital networks and communication infrastructure. Moreover, e-business provides a global platform where individuals and organizations interact, communicate, collaborate and obtain information. E-business web-based systems increasingly represent a competitive advantage for companies and have undergone great organizational changes (Currie and Parikh, 2006). Consequently, companies must develop a strategic plan for IT to improve the company e-business capabilities. Sabherwal and Chan (2001) affirm that companies can access the strategic use of IT by the way they utilize four categories of information systems – interorganizational, market, operational support and strategic decision support systems – to support their business strategy (**Premise 1**, Table 1).

Luftman et al. (1993) suggest that the success in a global market depends on more agile and flexible business structures. The dynamic nature of this market brings about changes regarding competitors, work, suppliers and regulations. Companies reach more customers, at a compensatory cost, with a change in the traditional paradigm: from mass production and mass distribution to mass customization and with faster product development, production, pricing and delivery. As

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Table 1
Theoretical research premises.

Premises	Main studies
Pre1 – IT strategic use can be assessed by the way firms utilize four categories of information systems – interorganizational, market, operational support and strategic decision support systems – to support its business strategy.	Sabherwal and Chan (2001); Venkatraman (1989)
Pre2 – The success of electronic business depends on critical factors, mainly: (a) capturing value; (b) experimentation and innovation; (c) flexibility; (d) information security; (e) interaction and customization; (f) exploitation of the expertise concerning channels; (g) relationships with partners.	Venkatraman (2000); Watson and Zinkhan (1997); Porter (2001); Kulatilaka and Venkatraman (2001); Christiaanse and Venkatraman (2002); Czuchry and Yasin (2003); Luftman et al. (1993).
Pre3 – MO consists of market intelligence generation and dissemination, and responsiveness – these behaviors rely on values, norms and artifacts.	Kohli and Jaworski (1990); Narver and Slater (1990); Homburg and Pflesser (2000); Matsuno and Mentzer (2000).
Pre4 – A MO is capable of questioning company premises regarding the current and potential market embracing a learning orientation and creating innovation (requirements for e-business success)	Slater and Narver (1995); Day (1999); Farrel and Oczkowski (2002); Kohli and Jaworski (1990); Baker and Sinkula (2002); Deshpandé et al. (1993).

consequence, firms must be highly market oriented and use new Internet based technologies to strengthen this process.

Venkatraman (2000) points out the impact of the Internet on transactions between companies and consumers (B2C). Concurrently, in transactions between companies (B2B), changes are already taking place in value chains, leading to the restructuring of operations with business partners. In fact, the greatest potential of the Web lies in the creation of new business models that may eventually change the *status quo* and create new rules for the competitive market, since to compete with these new models, companies must alter their structure. This perspective shows the importance of the development of a MO; the improvement of market perception and of responsiveness formation can generate greater value for the customers.

According to Kulatilaka and Venkatraman (2001), many e-businesses fail because they have taken the plunge into the Internet without considering some critical factors for their strategic and operational success. The solution, according to those authors, is to exploit Internet technologies in order to get benefits for their business, considering them as strategic options in a continuous process of market adaptation. Christiaanse and Venkatraman (2002) also comment on interorganizational relationships, based on the concept of exploiting expertise in electronic channels. Expertise exploitation is the ability that the company has to combine external data with internal procedures, generating a distinctive capability which is difficult to imitate, and which represents a competitive differential in the market. Consequently, expertise exploitation generates a capability to monitor and influence customer behavior, by using the knowledge obtained during the information exchange process in the relationship. Therefore, the electronic channel exploitation could reinforce MO by providing more effective responses to the market.

Czuchry and Yasin (2003) point out that market intelligence and internal capability assessment envisaging the aggregation of value to the customers represent the first step towards exploring e-business opportunities without underestimating the risks. Watson and Zinkhan (1997) argue that if the firm makes the right choices, the Web can provide the customer with advanced services, making a one-to-one market feasible, aiding the communication process, and adding value to the brand image. Porter (2001) states that e-business contributes to establish a closer and more interactive relation with their customers. **Premise 2** outlines e-business critical success factors (Table 1).

2.2. Market orientation

A market oriented organization is one whose actions are consistent with the concept of marketing. Accordingly, a number of researchers attempt to define the MO construct. Some definitions emphasize the cultural aspects of MO, based on a set of beliefs and values, while others have chosen a behavioral representation, focusing on the practical activities performed within the organization (Narver and Slater, 1990; Kohli and Jaworski, 1990; Homburg and Pflesser, 2000). A growing body of empirical evidence suggests the positive association of MO with company performance, in terms of profitability, clearer strategic vision, team spirit, and greater satisfaction of both employees and customers (Narver and Slater, 1990; Jaworski and Kohli, 1993; Cano et al., 2004; Kirca et al., 2005). However, some of those argue that the firm performance will depend on other factors, such as innovation and learning orientation (Baker and Sinkula, 2002; Slater and Narver, 1995).

Kohli and Jaworski (1990) state that abstract descriptions of the marketing concept are of little practical value and that the development of definitions dealing with specific practical activities becomes necessary. They define MO as the generation of market intelligence regarding current and potential customers, the dissemination of intelligence among departments, and the response to the market (responsiveness). Thus, a customer-based focus constitutes the central element of MO.

For Narver and Slater (1990), MO is a kind of organizational culture that more effectively and efficiently creates the behavior patterns, providing greater value for the customers and contributing to long term enhanced business performance. Despite defining MO as a kind of culture, they deal with behavioral components: customer orientation, competitor orientation and interfunctional coordination. Customer and competitor orientation include all the activities involved in the acquisition of information about current and potential customers (throughout the distribution channel) and competitors (their capabilities and technology). MO also includes its dissemination among the departments. Interfunctional coordination covers the collective efforts of the various departments to create a greater value for the customers. These components involved in intelligence generation and dissemination and in responsiveness correspond to the definition from Kohli and Jaworski (1990).

Homburg and Pflesser (2000) criticize the use of behavioral measures to assess MO. They state that the MO implementation depends on the organizational culture. They develop and test a multilayered model of market oriented organizational culture, composed of values, norms, artifacts and behaviors. Their findings attest the existence of a causal chain: the basic values affect the norms that guide the company MO, and the norms determine behaviors, since artifacts (success stories, rituals and language) support them. Ultimately, and at the same time, one can take the cultural and behavioral aspects of MO into account since the implementation of MO activities depends on the firm's cultural predisposition to reach this end. **Premise 3** presents the convergence of these definitions (Table 1).

Nevertheless, some authors argue that the development of MO represents only the first step to enhance business performance. Slater and Narver (1995) state that MO is one of the foundations of organizational learning. MO provides a sort of culture that promotes the organizational learning. A learning orientation fosters understanding and satisfies latent needs through new products, services and ways of doing business. Day (1994), however, argues that a MO is only likely to