A review of the RBV of the firm within the e-Business literature: What's next?

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ABSTRACT

The article provides a review of the adoption of a resource-based view of the firm (RBV) in eBusiness literature and, then, suggests directions for future research. First, a distinction is drawn between Internet resources and eBusiness capabilities. Second, the relationship between Internet resources and eBusiness value is emphasized. Third, the relationships among Internet resources, eBusiness capabilities and firm performance are argued and, finally, the complementarity of Internet resources and eBusiness capabilities is proposed as source of business value. In this regard, a set of propositions is advanced to help guide future research.

KEYWORDS: Internet; eBusiness; resource-based view of the firm; resources; capabilities; eBusiness value.

1. INTRODUCTION

The resource-based view of the firm (RBV) has been reflected in the information systems (IS) literature since the mid-1990s and is increasingly being used by business researchers to identify the characteristics of, so called, eBusiness. In particular the RBV provides guidance on identifying the contribution of these various technologies which may impact upon organisational performance (Santhanam & Hartono, 2003).

There is considerable debate about the value of eBusiness in this respect due to the gap between investment and the lack of empirical evidence for business enhancement. Case studies on firms such as eBay and Amazon demonstrate how to create business value, but there is a question as to whether the lessons learned from these "Internet giants" are more widely applicable. In this sense, the RBV has been offered as an explanation of how eBusiness overcomes its paradoxical nature and to what extent it is actually enabling increased organisational performance and value. Existing research (Zhu, 2004; Zhu & Kraemer, 2005) has found a significant relationship between eBusiness capabilities and firm performance. However, very little work has been undertaken to identify Internet resources and eBusiness capabilities. Similarly, although the complementarity of eBusiness capability has been studied (Zhu, 2004), little effort has been directed to assessing their fundamental impact. Moreover, the direct influences of Internet resources and eBusiness capabilities on performance have received very little attention. In this regard, the paper outlines how the RBV may augment research in eBusiness and its consequent added value.

The paper is structured as follows: The next two sections offer an overview of RBV in eBusiness research. Following that, Internet resources and eBusiness capabilities are described. Then, eBusiness value is discussed from a process perspective and a set of propositions are advanced to help guide future research.

2. BACKGROUND

The RBV has its origins in the management strategy literature and has been used to answer one of the most extensively researched questions in the field, related to understanding the sources of sustained competitive advantages (Porter, 1985; Rumelt et al., 1991). The RBV is based on two underlying arguments: resource heterogeneity and resource immobility. Resources and capabilities possessed by competing firms are heterogeneously distributed and may be a source of competitive advantage when they are valuable, rare, difficult to imitate, and not substitutable by other resources (Barney, 1991; Wernerfelt, 1984). At the same time, resources and capabilities are a source of sustained competitive advantage, that is, differences may be long lasting (resource immobility) when protected by barriers to imitation (Mahoney & Pandian, 1992) or isolating mechanisms such as time-compression diseconomies, historical uniqueness, embeddedness and causal ambiguity (Barney, 1991; Dierickx & Cool, 1989; Peteraf, 1993). Consequently, the RBV suggests that the effects of individual, firm-specific resources and capabilities on performance can be significant (Mahoney & Pandian, 1992).

The RVB provides a solid foundation to differentiate between eBusiness characteristics and their separate influences on performance (Santhanam & Hartono, 2003). In this respect Internet resources are not difficult to imitate as multiple firms can purchase these systems and thereby implement multiple strategies (Barney, 1991).

However, firms may obtain competitive advantages from exploiting their physical technology in a better (and/or different) way than other firms, even though competing firms do not vary in terms of their Internet resources. A differentiating factor for improved organisational performance is strategic intent rather than simple technological deployment. Clearly, Internet resources are necessary, but not a sufficient condition, for competitive advantages (Clemons & Row, 1991). They rarely contribute directly to competitive advantage as they mainly form part of a complex chain of assets (eBusiness capabilities) that may lead to better performance (Bhardwaj, 2000, Bhatt and Grover, 2005; Mata et al., 1995; Ross et al., 1996; Santhanam & Hartono, 2003). For instance, Ross et al. (1996) provided illustrative case examples to underscore the notion that eBusiness capabilities can enhance the performance of firms.

The eBusiness literature suggests a significant positive relationship between eBusiness capabilities and firm performance (Zhu, 2004; Zhu & Kraemer, 2005; Ravichandran & Lertwongsatien, 2005). However, very little work has been undertaken to identify the important distinction between Internet resources and eBusiness capabilities and their separate influences on performance.

2.1 Internet resources and eBusiness capabilities

The RBV generally tends to define resources broadly to include assets, infrastructure, skills, etc. While resources serve as the basic units of analysis, firms create competitive advantage by assembling resources. Grant (1991) suggests that these capabilities are a result of teams of resources working together. Teece et al. (1997) argued that capabilities cannot easily be bought; they must be built. Thus, building capabilities is not only a matter of combining resources; capabilities are rooted in processes and business routines. Consequently, capabilities involve complex patterns of coordination between people and organizations. In this respect, Day (1994) describes capabilities as complex bundles of accumulated knowledge, exercised through organizational processes, which enable firms to coordinate activities and make use of their assets. Day argues that these are closely entwined. More recently, Makadok (2001) considers capability as a special type of resource defined as an organizationally embedded non-transferable firm-specific resource whose purpose is to improve the productivity of the other resources possessed by the firm.

For the purposes of the present paper, the above definitions of capability permit the identification of three important characteristics:

a) Capabilities are rooted in processes and business routines, because it is capability that enables the activities in a business process to be carried out.

b) Capabilities are firm-specific, while an ordinary resource is not. Because of this embeddedness, ownership of a capability cannot easily be transferred from one organization to another.

c) The primary purpose of a capability is to enhance the productivity of the other resources that the firm possesses.

Internet resources are asset-based, while eBusiness capabilities comprise strategic intent formed around the productive use of Information Technology (IT). As a result, a firm's eBusiness capability can be defined as its ability to mobilize and deploy Internet-based resources, in combination with or in the presence of other valued resources. eBusiness capabilities are firm-specific (or interfirm-specific) and rooted in processes and business routines. In this sense, a distinction may be drawn between external and internal eBusiness capabilities. The former refers to the ability to mobilize Internet-based resources and other corporate resources with external business agents (e.g. supplier and customers), while the latter represents the ability to mobilize Internet-based resources and other corporate resources within a firm's boundaries.

2.2 e-Business value from a Process Perspective

Although much research using the RBV has focused on an aggregated dependent variable, namely, firm performance, this may not be the best way to test the RBV (Ray et al., 2004). For example, because firms can have competitive advantage in some business activities and competitive disadvantage in others, examining the relationship between resources and capabilities associated with different processes within a firm and its overall performance can lead to misleading conclusions. Ray et al. (2004) proposed examining the effectiveness of business processes as a way to test the RBV logic. Another issue is that some IT investments may provide benefits after a certain period but increase operating costs in the short term. Thus, using firm performance at the macro level is meaningless and can again lead to misleading conclusions. Researchers suggest a process-oriented approach to overcome these confounding problems. The locus of impact, that is, the business process, should be the primary level of analysis. Within the literature on eBusiness, recent research also suggests a perspective based on processes to overcome these problems (Subramaniam & Shaw, 2002). These arguments lead to the conclusion that a process approach should be used to study the business value of eBusiness within the RBV, but there is a question as to what eBusiness processes create business value.

Traditionally, to study the business value of IT, the IS literature has used the value chain analysis of Porter (1985). For instance, Mahmood and Soon (1991) developed a comprehensive model for measuring the potential impact of IT. Their model suggests that IT can help firms to improve performance along the value chain, on downstream dimensions, internal dimensions within the organization, and upstream dimensions. Following, Mahmood and Soon (1991), Tallon et al. (2000) decomposed IT business value into downstream dimensions (sales support, customer services, and market expansions), internal dimensions (internal process, internal operation, and staff productivity), and upstream dimensions (coordination with suppliers and business partners). Recently, within the eBusiness literature, Zhu and Kraemer (2005) measured eBusiness value from upstream dimensions (impact on sales and procurement) and internal dimensions (impact on internal operations). This research, according to literature review and in consistency with Ray et al.'s (2004) and Subramaniam and Shaw's (2002) arguments, suggests for measuring eBusiness value the effectiveness of two processes: online procurement and online sales. The business value of these processes is discussed below.

eProcurement, or buying online, can potentially provide distinct value propositions to the firm. These come from the reduction of procurement and inventory costs, as well as strategic networks with suppliers that allow effective and efficient supply chain management (SCM). With regard to procurement costs, Kaplan and Sawhney (2002) indicated that buying in e-Marketplaces considerably reduces transaction costs. With regard to strategic links and SCM, Internet technologies can enhance SCM decision making by enabling the collection of real-time information, and access to and analysis of this data in order to facilitate collaboration between trading partners in a supply chain. In this sense, Frohlich and Westbrook (2002) showed the importance of linking customers and suppliers together in tightly integrated networks. As a result of eProcurement, the collection of real-time information on demand is possible and, more importantly, products and services are delivered quickly and reliably when and where they are needed (Frohlich, 2002).

eSales, or selling online, can potentially provide distinct value propositions to the firm. These come from its impact on the volume of sales, the number of customers and the quality of customer service. The Internet present high reach and richness of information (Evans & Wurster, 1999), it connects firms to consumers in geographic areas that were costly to reach before the Internet (Steinfield et al., 2002). All this can help increasing sales and number of customers. For instance, virtual communities enable frequent interactions on a wide range of topics and thereby create a loyalty and enhance transaction frequency (Amit & Zott, 2001). At the same time, eBusiness allows innovation in the way firms do business (new business models), which may again influence sales and number of customers.

3. FUTURE RESEARCH DIRECTIONS

Two key implications emerge from the preceding discussions. First, it is important to recognize the fundamental differences that exist between Internet resources and eBusiness capabilities. Second, the distinct influences of Internet resources and eBusiness capabilities and their complementarity on performance. Figures 1 and 2 show the prepositions discussed below.

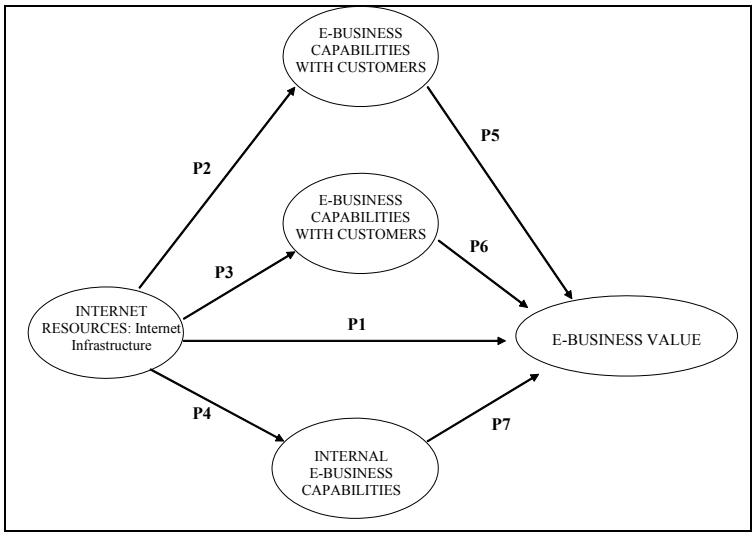

Figure 1. Internet resources and eBusiness capabilities (direct relationships)

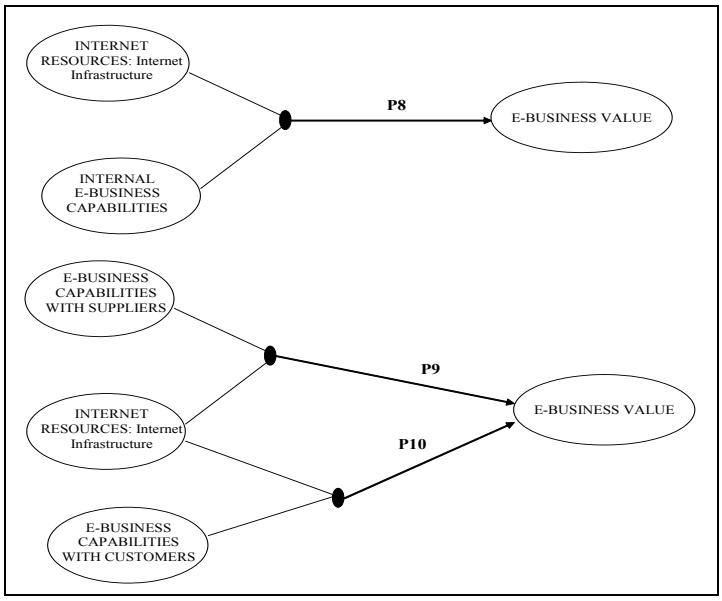

Figure 2. The complementarity of Internet resources and eBusiness capabilities

3.1 Internet resources and eBusiness value

Firms obtain competitive advantages on the basis of corporate resources that are firm specific, valuable, rare, imperfectly imitable, and not strategically substitutable by other resources (Barney, 1991). eBusiness resources are easy to duplicate, and, hence do not provide per se competitive advantages (Santhanam & Hartono, 2003). Although Internet infrastructure is argued to be valuable, it is not a source of competitive advantage (Bhatt y Grover, 2005). Thus, Internet infrastructure will rarely lead to superior performance, it is by itself imitable. If one firm can purchase certain Internet technologies and thereby implement some strategies, then other firms should also be able to purchase these technologies, and thus such tools should not be a source of competitive advantage. Furthermore, as the diffusion of the Internet continues, the ability of proprietary Internet infrastructure to be a source of competitive advantage continues to be eroded. These arguments indicate that Internet resources may not have a significant impact on eBusiness value. Thus, the following proposition is suggested:

Proposition 1: There is no relationship between Internet resources and eBusiness value

3.2 Internet resources and eBusiness capabilities

Although IS research has previously analysed the influence of resources and capabilities on firm performance, the research is fragmented and key gaps exist in the literature. Thus, despite research has been undertaken to identify different resources and capabilities, and to analyze their direct effects on the performance of firms, the relationship between resources and capabilities has not been systematically studied. Only recent studies such as Ravichandran and Lertwongsatien's (2005) offer a clear distinction between resources and capabilities. In this sense, Ravichandran and Lertwongsatien argue that examining the relationship between resources and capabilities can provide a better understanding of how resources could be deployed to develop capabilities. More specifically, within the area of eBusiness, recent studies have identified distinct eBusiness capabilities and studied their effect on performance (e.g. Zhu, 2004; Zhu & Kraemer, 2005). However, very little work has been undertaken to identify Internet resources and eBusiness capabilities and to study their relationship. Resources are the raw material in the development of capabilities. This relationship is implicit in the definition of capabilities as an organization's ability to assemble, integrate, and deploy valued resources, usually, in combination (Amit & Shoemaker, 1993). Hence, the second, third and fourth propositions posit a positive relationship between Internet resources and eBusiness capabilities.

Proposition 2: There is a positive relationship between Internet resources and eBusiness capabilities with suppliers

Proposition 3: There is a positive relationship between Internet resources and eBusiness capabilities with customers

Proposition 4: There is a positive relationship between Internet resources and internal eBusiness capabilities

3.3 eBusiness capabilities and eBusiness value

Investing in eBusiness is not a necessary nor sufficient condition for improving firm performance, since eBusiness investments might be misused (Tallon et al., 2000). In this sense, Internet resources cannot improve organizational performance if they are not used appropriately. However, when used appropriately Internet resources are expected to create intermediary effects, such as Internet technology being embedded in products and services, streamlined business processes, and improved decisions, which can be expected to have an influence on the performance of the firm (Ravichandran & Lertwongsatien, 2005).

Grant (1991) and Makadok (1991) emphasize that while resources by themselves can serve as basic units of analysis, firms create competitive advantage by assembling these resources to create organizational capabilities. Makadok states that these firm-specific capabilities, embedded in organizational processes, provide economic returns because that firm is more effective than its rivals in deploying resources. eBusiness researchers have adopted this capability logic of resources by arguing that competitors may easily duplicate investments in Internet resources by purchasing the same hardware and software and, hence, Internet resources per se do not provide competitive advantages. Rather, it is the manner in which firms leverage their Internet resources to create unique capabilities that impact firm performance (Clemons & Row, 1991; Mata et al, 1995). Thus, it is expected that external and internal eBusiness capabilities have the potential to create business value. The following propositions incorporate these expectations:

Proposition 5: There is a positive relationship between eBusiness capabilities with suppliers and eBusiness value

Proposition 6: There is a positive relationship between eBusiness capabilities with customers and eBusiness value

Proposition 7: There is a positive relationship between internal eBusiness capabilities and eBusiness value

The complementarity of Internet resources and internal eBusiness capabilities

Although there is research that posit a direct relationship between IT resources and firm performance (Bharadwaj, 2000; Feeny & Willcoks, 1998; Santhanam & Hartono, 2003), others have questioned the direct-effect argument and emphasized that IT resources are likely to affect firm performance only when they are deployed to create unique complementarities with other firm resources (Clemons & Row, 1991; Powell & Dent-Micallef, 1997).

Firm resources are considered complementary when the presence of one resource enhances the value or effect of another resource (Ravichandran & Lertwongsatien, 2005; Zhu, 2004). For example, the complementarity between online offerings and offline assets is the essence of "clicks-and-mortar" companies. Customers who buy products over the Internet value the possibility of getting support and service offered through bricks-and-mortar retail outlets, including the convenience of in-store pickup and return (Zhu, 2004). Hence the RBV highlights the role of complementarity as a source of value creation in eBusiness, though is not the only source as suggested by Amit and Zott (2001). As mentioned earlier, Internet resources are not difficult to imitate and per se do not provide competitive advantages. However, having a proper Internet infrastructure may facilitate the internal processing of online operations and this way influence positively firm performance. That is, the fact of possessing an adequate Internet infrastructure can be critical for the influence of internal eBusiness capabilities on business value. Similarly, possessing an adequate Internet infrastructure may facilitate collaboration between trading partners in a supply chain, linking customers and suppliers together in tightly integrated networks. Thus, the following propositions are suggested:

Proposition 8: The complementarity between Internet resources and internal eBusiness capabilities explains variations in eBusiness value

Proposition 9: The complementarity between Internet resources and eBusiness capabilities with suppliers explains variations in eBusiness value

Proposition 10: The complementarity between Internet resources and eBusiness capabilities with customers explains variations in eBusiness value

CONCLUSION

The RBV is being extensively used by IS and eBusiness researchers. In this respect, research offers a useful distinction between resources and capabilities. The former is asset-based, while the latter comprises a mixture of assets formed around the productive use of IT. In general, resources are not difficult to imitate; Internet technology is by itself typically imitable. Internet resources rarely contribute directly to competitive advantage. Instead, they form part of a complex chain of assets (eBusiness capabilities) that may lead to better performance. Thus, some researchers have described this in terms of capabilities and argue that these can create uniqueness and provide organizations a competitive advantage (Bhardwaj, 2000, Bhatt & Grover, 2005; Mata et al., 1995; Ross et al., 1996; Santhanam & Hartono, 2003). However, despite research has analyzed the relationship between capabilities and firm performance, only recent studies such as Ravichandran & Lertwongsatien's (2005) offer a clear distinction between IT resources and capabilities.

Within the eBusiness literature, recent studies have found a significant positive relationship between eBusiness capabilities and firm performance (Zhu, 2004; Zhu & Kraemer, 2005). However, very little work has been undertaken to identify Internet resources and eBusiness capabilities and study their separate influences on performance. Similarly, the relationship between Internet resources and eBusiness capabilities has not been studied. Moreover, little effort has been directed to assessing the complementarity of Internet resources and eBusiness capabilities. This article provides discussions, issues and ideas to help cover these gaps in the research.

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