THE RELATIONSHIPS BETWEEN IT FLEXIBILITY, IT-BUSINESS STRATEGIC RANGING, AND IT CAPABILITY

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ABSTRACT

At present, organizations are looking at IT flexibility as the main and fundamental competency that is required in order for organizations to exist and grow in the present-day environments. This research studies the problem about the lack of ranging between IT and business strategies. Therefore, according to various literatures on this subject, it was found that IT flexibility is one of the most essential factors that help support strategic ranging. The Mata analysis on different researcher having a detailed discussion on the possible areas related with the present body of knowledge has discovered gaps in the studies that have been undertaken on strategic ranging and IT flexibility. This is because IT capability in relation to IT flexibility and strategic ranging has been ignored in the previous studies. As a result, this research proposes a relationship between IT flexibility, IT capability, and strategic ranging.

KEYWORDS

IT-Business strategic ranging, IT flexibility, IT capability.

INTRODUCTION

All over the world, business environments have extremely changed and most of the industrial, commercial and government entities are now more dependent on their IT systems. Therefore, in the present business environment, the use of IT is prevalent and could lead to extended advantages in competitive situations. In this regard, Venkatraman et al. (1993) suggested that the critical function of IT is characterized in relation with the strategic aims of the organization. As the organizations and the management about IT are increasingly worries and continues to be IT positioning in line with strategic aims (Galliers, 1993). The literature show that the function of strategic positioning between IT and business policies is a essential part of an organization’s performance (Brown, 2004) and competitive advantage (Grant, 1991). Strategic ranging has proved to improved organizational efficiency (Chan, Huff, 1993), and enable organizations to improve on managing their business needs on the whole, technology and rivals (Boar, 1994), and while offering stability to a company (Labovitz, Rosansky, 1997). According to Piccoli and Ives (2005), organizations such as Wal-Mart and Dell have gained by aligning their IT strategies with their own business strategies. Even though as strategic ranging has benefits and to face stringent challenges in supporting strategic ranging in business setups in these times. Therefore, organizations have to adjust in active and unstable business settings to support that strategic ranging (Luftman, Papp, and Brier, 1999); such as price wars, decrease in demand, new
product launched by a competitor (Mendelson and Pillai, 1998). As a result, a more flexible IT has the ability to meet business changes to support strategic ranging in business environments (Bharadwaj, 2000). Previous studies have shown that flexibility in IT is an influencing and supporting strategic ranging in active and ever-changing business settings (Ness, 2005; Chung, Rainer, and Lewis, 2003).

2. IT – BUSINESS STRATEGIC RANGING

2.1. Importance of Strategic Ranging

The importance of strategic ranging is due to several reasons. Firstly, strategic ranging is effective in ensuring that the successful business performances are targeted by information systems (IS) (Das, Zahra, and Warkentin, 1991). Secondly, the importance of IS, and simultaneously, improving the understanding of IS managers in regarding to business goals (Newkirk, and Lederer, 2006). In addition, strategic ranging is also successful in ensuring Information Strategic Planning (ISP) is in ability with Business Planning (BP) activities in order for IS operations to back business strategies better and participate in business value ability (Teo, and King, 1997).

2.2. Definitions of Strategic Ranging

To explain strategic ranging in the literature a variety of conceptualizations and explanations are applied. King, (1978); Reich, and Benbasat, (2000) stated that to support a business mission, objectives, and plans; the information technology mission, objectives, and plans are extended; and the relation among IS strategic orientation and business strategic orientation in IS strategic ranging is explained (Chan, et al; 1997). Applying IT in an appropriate way, business strategies, goals are needed (Luftman, Papp, and Brier, 1999; Luftman, Lewis, and Oldach, 1993). The positioning of four parts, which are business strategy, IT strategy, organizational infrastructure and processes and IS infrastructure and processes in strategic ranging is stated (Luftman, Lewis, and Oldach, 1993).

3. IT FLEXIBILITY

3.1. Rationale for studying IT flexibility

Mckay and Brockway (1989) explain IT infrastructure as assisting to support IT potential which the entire organization depends on. It is stated that IT infrastructure should be flexible in order to capable to manage with the growing demands of customers without increasing costs (Weill, 1993). Duncan (1995) established IT infrastructure-flexibility as connectivity, compatibility and modularity. Both, connectivity and compatibility are linked to the idea of stretch and range (Keen, 1991), which relate to the common set of IT resources with internal and external users. Duncan (1995) defined connectivity as “the ability technology element to attach to the other elements inside and outside the organizational environment”. Byrd and Turner (2000) stated that compatibility was “the ability for information across any technology element”, and modularity was “the ability to include, modify and remove any software, hardware or data elements of the infrastructure with facility and with no major effect”. If ignoring the strategy, it pursues an organization benefits from constant ranging, even in the case of increase volatility, strategy evolves or changes direction, IT will be capable to offer the necessary support. Take the instance of airlines such as Delta and United which had earlier added low-cost carriers to their fleet. The main question was: Whether IT infrastructure could accommodate the additional booking load or if a totally new and separate infrastructure was required. This flexibility has a meaning in ranging; either addition of new lines of business or increasing the capacity of business where firms increase the size and manage of their strategy; therefore, IT has to be able to accept the underlying changes in business strategy in order to provide support for it (Tallon, 2009).

3.2. Definitions of IT flexibility

The ability to obtain the procedures that improve the control of the management over the environment of the organization is defined as flexibility (Byrd, & Turner, 2000). However, Tallon and Kraemer (2003) discussed that IT flexibility shows the ability to launch new resources and IT support with facility and swiftness the organizational policies. The quick employment of technology that is facilitated with IT infrastructure is IT flexibility (Ness, 2005). Ness (2005) mentioned that IT flexibility included three factors: Connectivity, compatibility and modularity. In addition, Duncan (1995) explained that with the help of connectivity, compatibility and modularity IT flexibility as being done, also, would have greater IT flexibility if it had high modularity, compatibility and connectivity.
• Compatibility: defined as a distributive variety of information over any technological platform (Duncan, 1995; Keen, 1991).

• Connectivity: defined as a technological element is a capable of coordinating and communicating with any other elements as well as with the external environment (Duncan, 1995).

• Modularity: Modularity refers to the ability of easy put together by adding, modifying and removing technology elements (Duncan, 1995). Duncan (1995) mentioned that modularity is the ability to standardize business processes in order to shared and reused.

3.3. Linking IT flexibility with Strategic Ranging

In this study, ranging is defined by Henderson and Venkatraman (1993) as a relation between business strategy and IT-strategy, and between IT-strategy and IT infrastructure. Business strategy performs as the sequences of the IT infrastructure and is finally determines the ranging which will succeed or not. In the consequent study, Venkatraman, Henderson and Oldach (1993) mention that competencies, both human and technological, are needed for constant ranging. Therefore, Technical IT skills such as programming, operations, design and the capacity to represent business knowledge are regarded as human capabilities. Moreover, designing and applying hardware, software and networks to achieve a number of business requirements are technical competencies. Both of these competencies map to the four elements of IT infrastructure flexibility observed by Byrd and Turner (2000) and Duncan (1995) in their examining studies.

4. LITERATURE REVIEW ON THE LINK BETWEEN IT

FLEXIBILITY AND STRATEGIC RANGING

Teece, Pisano and Shuen (1997) stated that IT flexibility has an influence on strategic ranging. But the importance of IT flexibility in relation to strategic ranging is that “defender” (Weill, Subramani and Broadbent, 2002; Miles, and Snow, 1978). Chan, Huff, Barclay and Manageland (1997) in their finding stated that there was a strong relation between increasing innovation level–as of IT flexibility–and strategic ranging. Tallon (2009) in different studies identified a favorable relation between IT infrastructure flexibility and strategic ranging. Strategic Information Systems Planning (SISP) acted as a mediator for this relationship. Ness’s (2005) in his thesis emphasis that IT flexibility, strategic ranging and IT effectiveness are all favorably correlated is supported by the literature review on IT flexibility. The fallout of the research reveals that a favorable relation continues to be present amid; also the data established that IT flexibility has a stronger relationship with IT effectiveness than does strategic ranging. As in the literature has shown that key feature to support strategic ranging in the environments is the flexibility of IT. In order to facilitate the current research, the term IT flexibility should be used regarding three measurement dimensions of modularity, connectivity and compatibility as well as to characterize the construct for the operational definition provided. These aspects have been briefly explained in the following sections.

5. IT CAPABILITY

The capability of IT makes complex situations easier for companies to top their competitors and at the same time become one of the most essential sources for the enterprises. Tippins, Michael, Ravipreet, Sohi.(2003) it suggested that IT capability is a crucial resource for enterprises. Some of the researchers discussed that IT-capabilities has been found more commonly in practitioner-based literature rather than in academic journals; also IT capability from various viewpoints that take into account of work design, power relationships, coordination and process transformation. (Bharadwaj, Anandhi S., V. Sambamurthy, & Robert W. Zmud. 1999). Lee, Girolami, Sejnowski.(1999) defined IT capability as a type of ability organizations that can support the activities and work processes in the organization by arranging and bringing together other resources that are important. Tuli, Kohli, and Bharadwaj, (2007) is described IT capability through the usage and allocation of IT resources in an organization that can incorporate other resources of the organizations.

6. LITERATURE ON IT CAPABILITY

In the literature the role of IT capabilities in enhancing organizational performance is well established and become more important in contemporary organizations, therefore, IT capabilities provide a basis of gaining competitive advantage. Moreover, the capacity of information technology helps to gain a competitive advantage over other competitors in the business (Bharadwaj, Anandhi, 2000) and improving the functionality of the organization (Santhanam, Radhika & Edward,
Hartono, 2003). In addition, IT capabilities help to collect data effectively and utilize the data in a favorable manner. Floyd et al. (1994) argued that capabilities can contribute to provide better quality of service with the help of improved personalized services, and in creating a knowledge bank to recognize and distribute organizational expertise. It is also argued that IT capabilities help to provide reliable service, reduce the errors in conducting business and increase consistent performance (Quinn, and Hilmer, 1994). This is done by eliminating inefficiency; lowering cost in the long run, improving the consistency of service and reducing errors in daily business transactions.

7. RESEARCH MODEL

According to the researches, the strategic ranging is affected by many factors. In this research we have focused on IT flexibility. By reviewing literatures, it was found that IT flexibility brought about a positive effect on strategic ranging. In relation to strategic ranging, many researchers have categorized modularity, connectivity and compatibility as elements of IT flexibility. Therefore, we examine all the mentioned elements against other constructs. Additionally, we have found a gap after examining and reviewing the literature on this subject. In order to fill in the gap, we have included IT capability construct in relation to strategic ranging and IT flexibility. We will discuss the arguments and support for the construct in more detail in next section. Figure 1 shows the research model. In this research, we have defined IT capability as an organization’s capacity to gain, position, influence its IT resources with an ability of other resources and capabilities to achieve the objectives of the business via IT execution. We believe that the elements that make up IT flexibility significantly influence IT capability and at the same time, IT capability also greatly influences strategic ranging.
8. DISCUSSION

8.1. The relationship between IT flexibility and IT capability

As IT-capabilities include data, fundamental applications, technologies for communications, data, hardware and software, the human factor and expertise in IT infrastructure are supported by IT flexibility. In the past, to adjust to the fast transforming business environment, IT infrastructure is seen to be essential. For information systems to be successful flexibility is the information systems have to be able to accommodate some degree of change, bearing in mind the needs of the business processes that are being supported. When there is not enough flexibility, the effectiveness of an information system is contained. This is so because the lack of flexibility stops it from being used in some conditions and makes exemptions of important handling. To make matters worse, the lack of flexibility decreases the duration or life of systems especially in situations where it stops the systems from making any changes. This is happens because it needs to accommodate the business processes that are being supported. Broadbent, Marianne & Peter, Weill (1997) suggested that Business application has been made part of IT infrastructure. Duncan (1995) stressed that firms were able to create applications that could intently fulfill the aims of business with flexible IT infrastructure. The observation made by Duncan [30] shows that IT infrastructure establishment may help to facilitate planned advancement in business processes. In other cases, the IT infrastructure may not facilitate the same innovations in business processes. She suggested that both business and IT application development capabilities reflect the flexibility of infrastructure elements. She suggested that infrastructure flexibility improves systems developers' ability to design and build systems to meet organizational business objectives.

8.1.1. The relationship between compatibility and IT capability

Across various technological platforms information has to be distributed within the business establishment. This ability to distribute the information in the organization is known as Compatibility (Keen, 1991; Duncan, 1995). IT compatibility not only assists to extend the boundaries of the establishment, but it also makes the employees more powerful. Within the corporate establishment information technology compatibility makes sure that information and data is available at all times (Tapscott, and Caston, 1993). Due to the availability of knowledge and information at all times, IT capabilities can be supported with the help of compatibility. Compatibility can also maintain the IT infrastructure. This is possible as the organization is capable of sharing any form of information across any technological platform.

8.1.2. The relationship between connectivity and IT capability

Duncan (1995) has defined connectivity as the element of technology to communicate or interact with any other exterior and interior elements in the environment of the organization. Therefore, when all applications, functional areas, persons in the organization are linked to each other, you have connectivity. Tapscott and Caston (1993) stressed that with IT connectivity, organizations that are flawless and transparent are able to be free from the influence of time and space. Therefore, the level or communications all through the organization is greatly improved and this makes it easier for users all across the borders of the organization to relat information at fast speed. As a result, our findings
imply that connectivity performs as a part to manage of IT capabilities.

8.1.3. The relationship between modularity and IT capability

Modularity is the ability to create or make changes fast to the business applications in order to deal with new business settings. Schilling (2000) is described modularity is as the level or degree in which a system’s element can be divided and put together again. Therefore, modularity has been modularized and which provides the ability to exchange and make information available to us through a variety of applications, especially between modern or fresh applications and legacy applications throughout an organization. When there is a better speed of applications being developed or modification of current applications then there is a greater level of modularity. As a result, we can conclude that, modularity supports IT-capabilities that comprises of IT infrastructure.

8.2. The relationship between IT flexibility and Strategic Ranging

When the extension of IT mission, objectives, and plans are supported by the organization’s mission, objectives, and plans (Sabherwal, Rajiv, 1999) then it refer IT-business strategic ranging. This ranging creates an integrated organization in which every function, unit, and person are focused on the organization’s competitiveness. Teece, Pisano and Shuen (1997) stated that strategic ranging is impacted by the flexibility of information technology. Chung et al. (2003) considered the elements of information technology flexibility and the elements (Connectivity, modularity, IT personnel and compatibility) on the success of the ranging between the Information Technology and the organization’s strategy. Beneficial, extraordinary, non-substitutable and stationary resources are viewed as the crucial judge of improved performance by many resource-based theories. However, these theories argued that organizations with adaptable infrastructure of information technology have to struggle between organizational policies and information technology. Therefore, such organizations with adaptable IT infrastructure are in a better position to redirect information technology around the value chain in order to maintain a change in the business strategy (Tallon, 2009).

To support this literature a quantitative study was presented by Ness (2005), and noted that the flexibility of Information Technology can be ascertained with the help of three distinct dimensions (connectivity dimension, compatibility dimension and modularity dimension). Therefore, it needs to measure the relationship between IT flexibility, strategic ranging and the effectiveness of Information Technology.

8.3. The relationship between IT capability and Strategic Ranging

Important features like communication, sharing domain knowledge, skills and relationship management are some of the important features of IT-capabilities that are involved. In this section we explain the features with regard to strategic ranging. The degree to which business executives and IS spend time and work in dealing with the relationship with one another is described as relationship management. Rockart et al. (1996) refer to the relationship between business executives and IS which work jointly in better understanding of the technological and business needs of the organization. It is perceived by Ross et al, (1996) that a good relationship between IT and business is one of the most important assets of IT. When there is a relationship between the CEO and CIO, it makes it possible for IS business planning integration to happen (Feeny, David, Leslie, Willcocks, 1998); as a result the ability of IT to add to the business’s worth will increase. Therefore, the integration of IT and business strategies will be a success and guaranteed (Rockart, John, Michael, Jeanne, Ross, 1996). But few other researchers having found a good relationship between IT executives and the business will improved the level of communication (Rockart, John, Michael, Jeanne, Ross, 1996). She also observed that only by having strong relationships between executives and IT staff will the much needed communication take place. Moreover, the relationship between business and IT is seen as an essential factor in making strategic ranging possible. For the ranging to work well, informal relationship networks play an essential part (Chan, Huff, 1993). Accordingly, task is an essential in an organization, and the skill is to perform processing in an efficient
and effective way that is fitting for the particular job. Skills that are gained can come from mentoring, training and practice. When skills are well-sharpened, resulting in improved level of output and ability for a business, competency is attained to succeed at a specific job (Luftman, Papp, and Brier, 1999). This characteristic skill to carry out a satisfactory job is the most sought after trait that businesses can encourage attaining and supporting competitiveness. When this trait is achieved business aims becomes easy therefore, the time and work spent by an organization can be a significant feature leading to the organization aligning its business to achieve its goals. Tallon, (2009) suggest that Skills is involved IT, managerial and business has an impact on strategic ranging. Another important aspect of IT capability is IT infrastructure that we explain with regard to strategic ranging in the following. For instance; Wal-Mart made new demands like cost cutting and just-in-time replacement of stock. With these demands increasing in the early 1990s, Johnson and Johnson faced new challenges in business. The business managers and the managers of Information Technology (IT) in Johnson and Johnson acted in alliance to develop a new set of Information Technology (IT) infrastructure capabilities. These capabilities facilitated the organization to offer the required services for its customers and at the same time reduce expenditures for the organization (Broadbent, Marianne & Peter, 1997). With the help of the organization’s Information Technology infrastructure and its applications related with its business focuses on delivering on time, but also focused on personalized information. The organization was in a position to offer information and at the same time process transactions in meeting the goals of the organization. Therefore, organizations can proved substantial benefits with the help of the organizations IT infrastructure, but also it can help to continue business practices. Strategic Ranging Model (SAM) is one of the research models that have been discussed by many scholars. The relationship between the four domains that includes business strategy, IT strategy, IT infrastructure and processes and organizational infrastructure and processes is described in SAM (Schilling, 2000). With regards to business strategies in SAM, to manage a business such as the market or product opportunities, unique expertise and business management like the options on structural mechanism for managing the business. In describing the IT choices is to extent of IT capacity, such as the dependability of system and its interconnectivity and IT management. Organizational infrastructure and processes deals with the management of infrastructure, business processes. Finally, IT infrastructure and the process are described, and this has the attributes of IT infrastructure, IT expertise and IT processes. Therefore, relationship between IT and business, human resource skills, IT infrastructure influence strategic ranging, these aspects are the most important factors of IT capability. As a result, IT capability has a positive impact on strategic ranging.

9. CONCLUSION

According to different literatures on this subject, it was found that IT flexibility is an essential factors that support strategic ranging environments, but the studies on this subject is limited. The researcher discussed on the possible areas related with the present body of knowledge has discovered gaps in the studies that have been done on strategic ranging and IT flexibility. This is because; IT flexibility and strategic ranging to IT capability relation have been ignored in the prior studies. To fill this gap, it is argued that IT capability influenced by dimensions of IT flexibility (i.e., modularity, connectivity and compatibility) and influences strategic ranging. At present, organizations are looking at IT flexibility as the main and fundamental competency that is required in order for organizations to exist and growing environments. Also, the literature of this research showed that modularity, connectivity and compatibility are the most important dimensions of IT flexibility. As a result, this research proposes the relationships between IT flexibility (i.e., modularity, connectivity and compatibility), IT capability and strategic ranging.

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