Governance, Management and IT Strategy in Organizations and Implications for Outsourcing

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Abstract. This paper has the purpose of discussing management of information technology (IT) in organizations from a theoretical point of view. Understanding the value that information technology can bring to corporations and therefore management and leadership of IT assets is a very important management aspect as information technology is becoming a key source of competitive advantage for small and big companies alike. However, the barriers that small and medium size enterprises face and the benefits they gain from IT are different then those faced by large corporations. Therefore the paper distinguishes between the models that can be used by large corporations to manage IT and the barriers that small and medium enterprises face in adopting IT. Finally the paper very shortly discusses implications of management of IT for outsourcing decisions.

Introduction

Information technology is becoming a pervasive factor of our daily and corporate lives. Corporations use IT for production, collaboration, managing knowledge, learning purposes and to provide online services such as for example e-banking (e.g. Fernandes et al., 2005; Gunnlaugsdottir, J. 2003; Scupola, 2008a). IT can contribute to create firm value in several ways. Examples include process planning and support improvement (Barua, Kriebel and Munkophadi, 1995), supplier linkages (Kling et al., 2001); increase company innovativeness through

e.g. new product and service enhancement (e.g. Barua, Kriebel and Munkophadi, 1995) and finally in improving customer relationships as they can result in an increase in market share (e.g. Porter and Millar, 1985). Given therefore the importance of IT, a corporation needs to think strategically about how can IT contribute to the business of the company, how to get business value from IT and how can IT contribute to gain a competitive advantage. Business value can be defined as the overall value that an investment brings to a corporation. Examples of measures of the business value of IT can be: 1) profitability: that is whether IT contributes to an increase in the profitability of the corporation; 2) competitive advantage; this can be measured for example as an increase in market share, shareholder value or customer satisfaction (Scupola, 2007).

Consequently, the productivity gains or the business value that companies are gaining from IT investments has been the focus of interest in research and business world over the last three decades or so (e.g. Brynjolfsson and Hitt, 1993; Brynjolfsson and Hitt, 1996). Many early studies that have struggled to measure the business value of information technology (IT) in organizations have showed that productivity gains are small or not existent. In the last two decades or so, researchers have therefore started arguing that the effects of information technology, electronic commerce, e-services have to be looked upon not only from a strict productivity increase point of view, but also from a competitive advantage point of view (Porter and Miller, 1985).

The main purpose of this paper is to theoretically present and discuss some approaches of management of IT as well as discuss barriers and benefits for IT adoption in small and medium size enterprises. Finally the implications of management of IT for IT outsourcing decisions are discussed.

The paper is structured as follows. This paragraph has introduced the purpose and the problematic of the paper. The next session discusses company size in relation to IT management, while the following one presents benefits and barriers of IT adoption in SMEs. The remainder of the paper introduces some specific approaches of IT management and some concluding remarks.

Management of IT and Corporation Size

Many approaches to manage IT in organizations exist. Examples are the IT governance approach (e.g. Weill and Ross 2004), the diffusion of innovations approach which specifically looks at the adoption and diffusion of IT in organizations (e.g. Scupola, 2008b) and management of IT at project level. In addition corporations can be categorized into big and small and medium size enterprises (SMEs). These two groups of companies are often mentioned in the literature as having different barriers and benefits from adopting IT as well as different management problems in dealing with IT (OECD, 2002).

But what are the factors that distinguish big corporations from SMEs? The number of employees and turnover are two factors used to categorize businesses (Ilhstrom et al., 2003). In addition such number depends on the part of the world we are dealing with. For example according to the European Parliament SMEs are businesses with up to 250 employees, net fixed assets of less than ECU 75 million, and with no more than one third of their capital in the hands of a larger company. The European Parliament divides SMEs into different sub-groups based on the number of employees, for instance small undertakings with 10 to 50 employees and medium-sized undertakings with 50 to 250 employees (European Parliament, 2000). Often however, the number of employees is used to classify SMEs. In USA small and medium size businesses are defined as businesses that have a maximum of 500 employees, while the Australian Statistics bureau defines small businesses as businesses that have 200 employees or less (www.business.gov.au), and European Union defines SMEs as businesses with up to 250 employees (Ilhstrom et al., 2003).

Much of the earlier literature on IT management has been based on the study of big corporations (e.g. Weill and Broadbent, 1998; Currie, 1995). However, in the last decade or so the literature looking at IT management in small and medium size enterprises have been flourishing (e.g. Thong and Yap, 1995). This is due to the important role that SMEs have in our society. For example SMEs have an important role in most economies by generating employment, engendering competition and creating economic wealth (OECD, 2000). SMEs represent between 96% and 99% of the total number of enterprises in most OECD countries, account for a big share of the economic output and for 60-70% of employment. The share of employment generated by SMEs has been rising since the 1980s. For example in Denmark, SMEs account for almost 100% of the firms with only 0.2 % of the total enterprises being large firms and account for 70% of total employment (OECD, 2000). SMEs are also characterized by a high degree of failures as within five years 80 % of all new small businesses have gone bankruptcy. Therefore given the importance of small businesses for our society, they need to be embraced in the new information society as it is expected that IT might affect their productivity, market access and competitiveness as for large businesses.

Benefits and Barriers of IT adoption in SMEs'

A number of studies have investigated barriers and benefits of IT adoption in SMEs and a lot has been written about SMEs' poor ability to manage and use IT as a strategic resource (e.g. Ilhstrom et al., 2003; OECD, 2002; Scupola, 2008b).

For example, SMEs lack both business and IS/IT strategy, they have limited information skills and when they modernize their equipment; the planning process is less structured and more incremental than in larger businesses. The

strategic decision making process is short-termed and reactive rather then proactive. SMEs often use intuitive methods when monitoring new technologies and collect information in a more iterative and less organized manner. In small businesses the CEO is often the same person who owns the company. This makes his or her vision and commitment essential, especially to get the adequate resources and support to implement an innovation (e.g. Ilhstrom et al., 2003)

Another important difference between SMEs and large businesses are the resource constraints that SMEs have to deal with. SMEs usually have scarce availability of human as well as financial resources (Dholakia and Kshetri, 2004). Their scarce financial resources make them more vulnerable to risk taking and less willing to investment into innovation such as IT. Also the level of IT knowledge is generally low in SMEs both at upper management level and employee level. Small businesses either have difficulties recruiting and keeping well trained IT personnel or their scarce financial resources prevents them from employing their own IT expertise. Even though there is often a general lack of IS expertise in SMEs, small companies are also less willing to use external IT consulting services (Ilhstrom et al., 2003).

However there are also some advantages with being small. Small companies are usually more flexible and they can more rapidly adapt to new demands and changes in the external environment. This is facilitated by an informal internal and external communication that takes place in networks (Chong and Bauer, 2000). The ability of fast re-organization is a valuable resource since a high level of uncertainty usually characterizes the environment of smaller businesses. Small businesses are also less bureaucratic and less risk-averse (Ilhstrom et al., 2003).

For inter-organizational systems such as EDI, e-commerce and e-business the poor spreading to small companies, however, also constrain their larger business partners' possibility to gain optimal advantages from these IT investments. Once a company has implemented any form of inter-organizational system it is a large advantage to be able to connect all the partners to the new system. In that way they avoid working with double routines and can reach maximal benefits.

In a literature review concerning barriers or inhibitors to implementing and adopting IT by SMEs, Ilhstrom et al. (2003) found that the issues discussed fall mainly into two categories: internal and external to the organization. Internal or organizational issues relate mainly to the lack of awareness and knowledge in SMEs and resource limitations. External issues, outside the sphere of influence of SMEs, include mainly technical considerations and the topic of external influence or support. IT adoption benefits are often classified according to direct or indirect and short or long term. Direct benefits are easily quantifiable by financial data as number of customers and increased sales. Indirect benefits are difficult to quantify and include contribution to internationalization and increased competitive advantage (Scupola, 2003).

Leadership in SMEs' IT adoption

The organizational characteristics and individual characteristics are important in SMEs' IT adoption (e.g. Sabherwal et al., 2006). Within the individual characteristics, much attention has been focused on the characteristics of the CEO (Thong and Yap, 1995; Sabherwal et al., 2006). The argument goes that he/she has a major role in the business, which is especially important in SMEs where the CEO is often also the owner and is responsible for the survival of the business (Thong and Yap, 1995). Examples of characteristics investigated are CEO's IT knowledge and attitude towards IT innovations. However CEOs in small companies are often not especially knowledgeable about information technology, which can be a major barrier to adoption (Sabherwal et al., 2006). Usually the owner-manager of SMEs lacks IT knowledge and this also discourages other members in the firm to investigate IT opportunities. Finally previous literature has pointed out that the CEO is generally the single point of authority, usually does not share information with other organization's employees and suggest that the CEO is the only one with access to the information needed to identify new opportunities, therefore management support is crucial for innovation adoption (Scupola, 2008b). The role of CEO and top management becomes even more important considering that small and medium size businesses have limited slack resources to invest in information technology and e-commerce (Thong and Yap, 1995; Scupola, 2008b). Given the central role that the CEO has in small firms' decision making, it is important to focus on leadership in SMEs' IT management. Scupola (2007) suggests four main types of IT leadership styles:

Collaborative. This involves widespread employees' participation in important decisions about the organizations' future, and about the means of bringing about the organizational change.

Consultative. This style involves consultation with employees, primarily about the means of conducting the organizational change, with their possible limited involvement in setting goals of relevance to their expertise area or responsibility.

Directive. This leadership style involves the use of managerial authority and direction as the main form of decision making about the organization's future, and about the means of bringing about organizational change.

Coercive. This style of leadership involves managers/executives or outside parties forcing or imposing change on key groups in the organization.

Models of IT Management

So far we have discussed why it is important for corporations, both big and small to manage IT. We have also touched upon the problematic of small versus large corporations in relation to adoption of IT and we have provided a short list of IT leadership styles. In the rest of the paper we focus on specific models that

can be used to manage IT mostly in big corporations. Currie (1995) distinguishes several approaches to management of IT including technical, strategic, managerial, or knowledge management. Within the broad realm of IT management approaches as for example business process reengineering (e.g. Davenport, 1993) and organizational learning (e.g. Garvin, 1993) the focus is here on the following:

1. IT governance
2. Strategic Alignment
3. Business Value Complementarity
4. Outsourcing

IT Governance

First of all we can talk about IT governance only in bigger corporations. Applying IT governance should help corporations to optimize the way IT capabilities enhance the firm's competitiveness. The question in this approach is whether IT management is left to the IT department or all managers throughout the organization recognize the importance of IT for generating business value. For many years corporations could succeed without developing strategies for management of IT, but recently IT spending is the biggest yearly spending in corporations, therefore the need to manage it. Weill and Ross (2004) by investigating 250 big corporations in 3 different continents found that the top performing enterprises proactively use IT in a variety of ways, all leading to the concept of IT governance. They define IT governance as

"Specifying the decision rights and accountability framework to encourage desirable behaviour in using IT" (Weill and Ross, 2004, p.8).

This definition of IT governance evidences two aspects: the behavioral aspect and the normative aspect. The behavioral aspect encompasses the relationships between different agents such as employees, managers and customers. The normative aspect deals with the rules framing these behaviors and all together determines the company strategy. Examples of such normative aspects are company laws and security regulations.

According to Weill and Ross (2004) IT governance should map who should be in charge of and make decisions about IT. This means the appointment of committees, designing budgeting processes approvals etc. that encourages behaviours consistent with the company strategy, mission and values. In the governance optic, IT assets should be managed and governed as all the other assets of an organization. Examples of organizational assets can be:

1. Information and IT assets: digitized data, information, knowledge about customers, process performance, finances, information systems.
2. Human assets: people, skills, career paths, competencies, training etc.
3. Financial assets: cash, investments, cash flow.
4. Physical Assets: Buildings, plants, equipments, security.

5. IP assets: intellectual property rights, product, service, process know how.

The governance of these assets takes place through organizational mechanisms such as structures, committees, procedures, audits.

The IT Strategic Alignment Perspective

While the IT governance perspective argued for the need of establishing IT governance involving all the stakeholders of the corporation, the IT strategic alignment perspective focus at corporate strategy level. This perspective argues that while organizations develop strategies in the business arena, they are not so used to develop IT strategies (Earl, 1989) and that the inability to realize value from IT is due to the lack of alignment between a corporation business strategy and its IT strategy. Here the model of IT strategic alignment developed by Henderson and Venkatraman (1993) is presented. Henderson and Venkatraman (1993) state that the concept of strategic alignment is based on two major buildings blocks: strategic fit and functional integration. The strategic fit implies that any business strategy should address both the external environment and the internal environment or domain. The external environment consists of decisions such as product market offerings, make-versus buy decisions, competition, etc. The internal environment or domain pertains choices and decisions concerning for example the organizational form (e.g. hierarchy or matrix), the rationale for the design of business processes as for example product delivery and customer service and the acquisition and development of the human resource skills necessary for achieving the required organizational competencies. Here business processes are defined as the specific processes into which each primary activity of the value chain can be decomposed. In this case the company can be thought of as a bundling of business processes. Similarly to the business strategy, Henderson and Venkatraman (1993) argue that the IT strategy should be based on an external domain which consists of how the firm is positioned in the IT marketplace and the internal IT domain which deals with how the internal IT infrastructure is and should be configured and managed.

It is important to take into consideration this distinction and avoid the usual mistake of taking only the internal perspective into consideration and especially establish an adequate fit between the external and the internal company position in relation to information technology.

The second important element of the Strategic Alignment model is the need to integrate business strategy and the IT strategy. This dimension takes into consideration how choices made in the IT domain impact choices made in the business domain and vice versa. This model distinguishes two types of integration between business and IT domains:

Strategic integration-it is the link between business strategy and IT strategy concerning the external context.

Operational integration- it concerns the corresponding internal domains. It represents the link between organizational infrastructure and processes and the IT infrastructure and processes.

A third premise of the model is that effective management of IT requires a balance among the choices in all four domains: the external business environment, the internal business environment, the external IT domain and the internal IT domain.

The business value complementarity approach

In the 1990s, the research on measuring the economic and performance contributions of IT can be divided into two main streams: one based on production economics and one based on "process oriented" models of IT value creation. The IT production studies are based on classical production economics and hypothesize that IT investments are inputs to a firm's production function to the same extent as land, labor and capital are. These studies finally started finding signs of productivity gains from IT, thus dispelling the productivity paradox. Simultaneously, process-oriented studies started hypothesizing relationships between IT and other input factors to performance variables at various levels of aggregation. These studies (e.g. Kauffman & Kriebel, 1988) have laid the foundation of the business value approach to the impact of IT on firm performance. After having dispelled the productivity paradox, new refinements to existing approaches are emerging to measure the contribution of IT to business performance. An important stream of research is pointing to complementarity theory to investigate the interactions between IT and other organizational factors such as increases in market share, customer satisfaction, improved knowledge sharing (e.g. Barua et al., 1996). The business value complementarity theory is based on the notion of complementarity in economics. Milgrom and Roberts (1990) say that "several activities are mutually complementary if doing more of any one activity increases (or at least does not decrease) the marginal profitability of each other activity in the group" (p.108). Complementarities among activities imply mutual relationships and dependence among various activities whose exploration can lead to higher profitability. According to this theory, it is important to explore complementarities among organizational and technology variables in implementing new business processes or in designing new business models and to avoid considering only information technology variables (Scupola, 2007).

Implications for Outsourcing

As showed above, IT can create value for a corporation and has a strategic importance for corporations. However, in the last decade or so, many corporations are fully or partially outsourcing their IT functions to outside service

providers or vendors. IT outsourcing is seen as a means of reducing corporations' expenses, thus helping them to maintain a competitive advantage (Lacity and Willcocks, 2000).

Outsourcing is defined in the literature in different ways (e.g. Dibbern et al., 2004). According to Lacity and Willcocks (2000), one way is "either contracting out or selling organizational assets to a third party supplier which could be a systems consulting firm, contractor, or hardware vendor". Offshore outsourcing means the outsourcing of a function to a company located in a foreign country. This is usually done due to lower wages or costs in the foreign country.

It is argued here that independently of the company size, there is an undeniable need for a systematic strategic analysis of the business value that IT brings to a corporation before deciding whether or not a particular IT function should be outsourced or in sourced and evaluates the pros and cons of such decision. Michael Earl (1996) in fact points out seven major risks of outsourcing among which possibility of weak management, outdated technology skills and inexperienced staff.

Conclusions

The major purpose of this paper has been to show why IT management is important for corporations, both, big and small, how they can derive business value from IT and what its implications for outsourcing are. In doing so the paper has discussed the differences between small and medium size enterprises (SMEs); what are the major barriers that SMEs face in IT adoption as well as what are the main benefits that SMEs gain from adopting IT. The paper has also argued that SMEs decision making is characterized by ad-hoc decisions and often it is the CEO the responsible for such decisions. On the other hand large corporations are complex systems that need to develop an IT strategy and need to understand how IT can be used to support the corporate strategy, like for any other business function as marketing, finance, human resource, etc. The need for an IT strategy is justified by the fact that IT spending is becoming nowadays the largest spending in big corporations. The paper has then presented three approaches that can be used by companies to manage IT: the IT governance approach, the IT alignment approach and the business value complementarity approach.

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