INFORMATION TECHNOLOGY AND CORPORATE STRATEGIES IN SMALL AND MEDIUM ENTERPRISES

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ABSTRACT
Each organisation is aware of the special effects, benefits and implication of Information technology (IT) in business performance and also its capacity in building sustainable competitive advantages. In business, IT is used through the value chains of activities which help the organisation to optimize and control functions of operations for easy decision making. Also, the use of IT as a competitive weapon has become a popular instrument to influence on a particular organisational performance and the processes that will allow a smooth coordination of technology and corporate as well as business strategies. This article attempts to integrate them in as a more comprehensive viewpoint and mention that the importance of alignment of IT/IS and business strategies of organisations as a key issue for managers to formulate the organisational business and IT/IS strategies.

Key Words: Information technology, Corporate strategy, Competitive advantage, value chain, Strategic Alignment

INTRODUCTION
Today, most organisations in all sectors of industry, commerce and government are fundamentally dependent on their information technologies. In the words of Rockart (1979) ‘Information Technology (IT) has become inextricably intertwined with businesses. In some industries such as telecommunications, media, entertainment and financial services, where the product is already or is being increasingly digitized, the existence of an organisation critically depends on the effective application of IT. The information revolution is sweeping through our economy. No company can escape its effects. Dramatic reduction in the cost of achieving, processing, and transmitting information is changing the mode by which we do business. This article moves towards the explaining and distinguishing impact IT has on internal and corporate strategies in small and medium enterprises.

IT AND CORPORATE STRATEGY
All organisations have some form of strategy, whether implicit or explicit and the core of business strategy lies in creating future competitive advantages faster than competitors. The unstable economic conditions of the last few years have helped to create a challenging business environment for IT.

Nieto. J et al (2006) explored the possibilities offered by the IT to facilitate the internationalization process of small and medium enterprises (SMEs) as well as to improve the relationship between these and other firms within the same value chain.

SMEs play a very important role in the economy as job creators. They also make significant contributions to technological progress and increased competitiveness (Dutta and Evrard, 1999). A combination of external factors has greatly improved internationalization opportunities for SMEs (Acs and Preston, 1997; Lu and Beamish, 2001). Among these factors, we should point out transportation, growing market liberalization and the use of efficient communication technology. Along these lines, Amit and Zott (2001) identify up to four different ways of creating value in e-commerce projects: higher effectiveness, exploitation of new business opportunities and consolidation of competitive positions, growth in client fidelity or restriction of competitors’ possibilities.

Furthermore, in the past, firms used to have non-cooperative relationships, not only with competitors but also with suppliers and even clients (Porter, 1980), whereas nowadays firms belong to networks where they can concentrate in a certain activity so as to maximize efficiency, enhance their innovation capacity and decision support systems (DSS) already in place in most on which systems for competitive advantage can be built. Without this base, many of these systems would not be possible.

The profitability potential of any firm depends on its ability to employ its sources of competitive advantage successfully and to develop an appropriate resource base. Several works create the required characteristics for a given resource to be considered strategic and become a source of sustainable competitive advantage (Barney, 1991; Grant, 1991; Peteraf, 1993). Consequently, it is essential for the firm to develop capabilities in order to obtain the benefits resulting from the use of IT.

Transaction costs economics (Williamson, 1975, 1985) provides a complementary theoretical approach to analyze the role of IT in a firm’s behavior and competitiveness. Information asymmetries and the assumption of opportunistic behaviors are some of the main causes of transaction costs, leading to the existence of big, vertically integrated companies.

Further, Bakos J.Y et al (1986) explained opportunities arise from IT can be analyzed from three perspectives: (1) that of an organisation trying to improve the efficiency and effectiveness of the current status, (2) that of an industry insider trying to out-maneuver other participants in a competitive rivalry, and (3) that of an outsider investigating whether to enter an industry.

In another approach, Rockart and Scott Morton identified three types of opportunities that can create competitive advantage into: (1) improve each value adding function, (2) link with customers
and suppliers to increase their switching costs, and (3) create new businesses through services or products.

**IT AND INTERNAL STRATEGY**

**Internal strategy** is related to the improvement of efficient and effective organisational structures and processes for achieving goals and objectives.

The corporate strategies are closely related to IT. For example, in case of internal strategy, a firm can optimize its distribution business channels into online order entry system and place terminals in customer's purchasing departments. This system can increase the efficiency of the firm's operations, which is an element of internal strategy. The terminal can retain the customer with relevant information, and by speeding orders can help the customer to reduce his/her expenses. So it increases customer switching costs and makes it more difficult to change its brand as well as supplier.

Improving the efficiency and effectiveness of organisations is the traditional domain of the information systems function. Rockart and Scott Morton have suggested that traditional information systems can also have important implications for the competitive position of the firm. They showed that these systems can affect competitive performance through their impact on management processes, personnel, and organisational structure.

Ward, J. et al (2002) explored different views of strategic information systems. The dimensions of Figure 1 show the changing role of IS/IT—efficiency and effectiveness of existing activities. In the Figure, electronic data interchange (EDI) or e-commerce, at its basic level of automating existing business transactions, is not considered strategic since it merely improves the efficiency of transaction handling. Also, executive information systems (EIS) have been included under MIS since the majority is ‘higher-level’ versions of MIS; on the other hand, IT/IS make firms to change the process of job and organisational structure which can lead to create business advantage to overcome the competitors.

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**Figure 1**

There are various published papers on identifying opportunities to support management processes with IT. These techniques differ in focus, emphasis, and applicability to particular areas of concern.
The first generation of methodologies employed a strictly operational view of the firm, with an objective to improve the efficiency of basic business processes. Representative of this approach are business systems planning (BSP), and office automation methodology (OAM) (Hammer, M.M et al, 1980; Sirbu,M et al,1984). These techniques signify ways of formally modeling the operations of the enterprise so that potential improvements in efficiency and effectiveness can be analyzed. They are not easily applied to poorly structured functions, such as senior management roles, which are not willing to formal modeling. One of the most applicable techniques to redesign organisation is Business Process Re-engineering (BPR). In management, Business Process Re-engineering (BPR) is an approach aiming at improvements by means of elevating efficiency and effectiveness of the business process that exist within and across organisations. The key to BPR is for organisations to look at their business processes from a "clean slate" perspective and determine how they can best construct these processes to improve the conduct of business (Wikipedia). In essence, business BPR not merely automate existing work practices but seeking opportunities where existing ways of working can be totally changed. The power of IT, in particular, provides the opportunity for new and innovative ways of organizing and enabling organisational work to be performed in ways that are not possible manually. (Ward.J et al, 2002).

In another approach, the critical success factors (CSF) methodology (Bullen, C.V. et al, 1981; Rockart, J.F, 1979) has been used successfully in these unstructured environments to find out their latent structure. This structure, composed of business goals and related causal success factors, substitutes for a formal model of the functional area, and can be analyzed for opportunities to improve operating efficiency through the application of IT.

**IT AND COMPETITIVE STRATEGY**

In any company, IT has a dominant effect on competitive advantages in either cost or differentiation. The technology also affects value activity themselves or allows companies to gain competitive advantage by utilizing changes in competitive scope. Porter et al (1996) stated; the IT is affecting competition in three fundamental ways

1. It changes industry structure and, in so doing, alters the rules of competition.
2. It creates competitive advantage by giving companies new way to outperform their rivals.
3. It spawns whole new business, often from within a company’s existing operations.

A number of authors have identified opportunities for the application of IT to create competitive advantage. Two general approaches can be distinguished: a value-added chain analysis of the firm's operations and Porter's framework for competitive analysis.
Value Chain analysis:

The concept of Value Chain Analysis is described by Michael Porter (1985), who notes that: ‘Every firm is a collection of activities that are performed to design, produce, market, deliver and support its products or services. All these activities can be represented using a value chain. Value chains can only be understood in the context of the business unit.’

![Michael Porter's Value Chain Framework](source.png)

Figure 2 illustrates the value chain approach which first distinguishes between two types of business activity.


**Primary activities**—those that enable it to fulfill its role in the industry value chain and hence satisfies its customers, who see the direct effects of how well those activities are carried out. Not only must each activity be performed well, they must also link together effectively if the overall business performance is to be optimized.

**Support activities**—those which are necessary to control and develop the business over time and thereby add value indirectly—the value being realized through the success of the primary activities.

The basic tool for understanding the influence of IT on companies is the value chain – the set of activities through which a product or service is created and delivered to customers. The value chain is a framework for identifying all these activities and analyzing how they affect both a company’s costs and the value delivered to buyers. IT is permitting the value chain at every point, transforming the way value activities are performed and the nature of the linkage among them (see figure 3) (Porter, ME, 2001). Some involve moving physical activities on-line, while others involve making physical activities more cost effective. Ward J, et al (2002) discussed it not only improves the economics of transaction processing but also enables the whole chain to respond more effectively to real-time demand and supply changes, provided transaction information is shared.
Porter's framework for competitive analysis

Porter advanced the idea that competition in any industry is rooted in its principal economic structure, so that it is more than a superficial game of moves and countermoves among participating firms. This approach is reflected in the framework he proposed to explain: i.e. the dynamics of competition in an industry. As Figure 4 illustrates, an industry is new or old, its structural attractiveness is determined by five underlying forces of competition: the intensity of rivalry among existing competitors, the barriers to entry for new competitors, the threat of substitute products or services, the bargaining power of suppliers, and the bargaining power of buyers.

Competitive Forces

As IT impacts the products, services, or operations of a business, it may change the relationship between an industry and its suppliers. For example, the use of complex production line systems by the auto industry is forcing robots producers to become much more quality conscious. When industries...
become much more dependent upon IT, the bargaining power of the IT supplier will become an important force for a firm to consider planning strategy. It also changes the level of sophistication of some industries' suppliers.

Suppliers of funds to financial institutions are increasingly more sophisticated (and consequently more powerful), because IT allows them to monitor and redeploy investments with astonishing ease (Parsons, L.G., 1986).

IT also affects the buyer bargaining power of industries, such as new products, services, and distribution channels. For example, buyers in the banking industry can now choose products and services from several channels. The buyer-industry relationship has been fundamentally changed by Automated teller machine (ATMs), point-of-sale terminals (POSs), and electronic home banking.

On the other hand, IT affects the rate of new entry into industries by raising the barrier to delay competitor entry by providing new service or product features that appeal to customers. For example, in the banking industry, IT-based access to banking services has seriously eroded the traditional entry barriers enjoyed by many branch offices. In the distribution industry, IT has created new entry barriers
by requiring investment in extensive computer and telecommunication networks that are used to control costs in large-scale multiplication distribution facilities. In effect, IT has created a new scale-economy barrier which the new entrant must overcome in order to price competitively and still be profitable. (Parsons, L.G., 1986).

Finally, IT changes industry structure by affecting the rivalry bases among intra-industry competitors. By introducing a new competitive weapon into various settings, IT sparks outbreaks of firm warfare. For example, recently, ICICI bank has introduced TV banking and i-zone to serve the customers as a new weapon to improve the bank’s position in its competitive environment.

CREATING COMPETITIVE ADVANTAGE

Porter, ME et al (1996) argued that, in any company, IT has a powerful effect on competitive advantage in either cost or differentiation. The technology affects value activities themselves or allows companies to gain competition by exploiting changes in competitive scope. Based on an extensive review of academic and practitioner perspectives on competitive strategies and competitive advantage, there are five strategic thrusts to enhance a firm’s competitive advantage. These are differentiation, cost reduction, innovation, growth, and alliance (Wiseman, 1988).

Differentiation

IT helps a firm to differentiate itself not only through price but also through product innovation, shorter-time to market, and customer service (Bloch et al., 1996). IT adoption can help a firm provide customized products and services, thus enhancing its differentiation advantage. Aided by the Internet’s interactivity feature – e-mail, registration form, discussion group, and customer communities – a firm can easily collect customer data, which includes demographic data, product comments and potential demands for certain products/services. These data can provide a good foundation for the firm to customize existing products in innovative ways (Fruhling & Digman, 2000), which will help the firm differentiate its products and services from its competitors or concentrate on a niche market.

Additionally, Smith (2000), explained, the IT also provides an opportunity for a firm to establish its brand image. Firms can use Web sites to reinforce their identities, the differentiation of which can help build up customer loyalty, one of the most powerful competitive weapons in catching market and customer share.

Cost reduction

Research on IT suggests that IT and the Internet can dramatically reduce the costs of obtaining, processing and transmitting information, thus changing the way firms do business (Porter & Millar, 1996; Porter, 2001). IT adoption can reduce the cost of marketing, advertising, and business operations.
Cost reductions induced by the IT come from less expensive product promotion, cheaper distribution channels, and direct savings (Bloch et al., 1996). Further, the decrease in distribution costs can be expressed as a reduction in overhead expenses such as inventory, retail space, and personnel (Fruhling & Digman, 2000). Additionally to reducing the costs of existing business activities, the IT can help promote cost leadership by providing valuable new services inexpensively (Ghosh, 1998). For example, a bank is able to provide online customer service and technical support by putting frequently asked questions (FAQs) on its Web site. Additionally, customers can obtain useful information from an online community by interacting with other customers regarding product queries.

**Innovation**

An innovative advantage can make firms to cover products and process R&D, purchase and transport raw materials, testing, quality control, marketing, sales, wholesale distribution, and retailing. IT adoption can offer firms an opportunity to experiment with new products, services, and processes (Bloch et al., 1996). Moreover, IT not only reduces information distribution time, but also reduces product cycle time.

**Growth**

Fruhling et al (2000) developed IT adoption can help a firm expand its market and customer share, thus facilitating a firm’s growth strategy. IT adoption affects a firm’s growth ability by increasing its scope and extending its core business through market penetration and development or product development. Based on IT, a firm is able to quickly and effectively develop its geographical markets regionally and globally. Further, IT can help a firm to improve relationships with customers by providing more effective marketing, new channels, shorter time to market, customized or personalized product, online 24-h technical support and online interactive community. These relationships can increase the possibility of sales and opportunities to introduce new products and services (Fruhling & Digman, 2000; Porter, 2001).

**Alliance**

The new ways of competing question national borders since the aim is to find the most suitable partner regardless of its physical location, IT could play an important role in this process to ensure network coordination and simplicity. So, IT helps to create many new inter-relationships among businesses and expanding the scope of industries in which a firm must compete to achieve competitive advantage (Porter & Millar, 1996; Porter, 2001). To maintain a successful alliance, communications between partners play a significant role (Monczka et al., 1998). Further, information sharing relevant information and delivering on promises are important in managing the relationship. IT in a firm can
improve its alliance advantage by providing an efficient and cheaper communication channel among alliance partners.

Further, Fruhling et al (2000) explained, IT provides suitable access to information and offers a proposal, independent means for alliance partners to exchange information. Strong B2B alliances can be created in the procurement process and partnerships can be developed from linkages in the distribution channel using electronic commerce.

Alignment of business strategies and IS/IT strategies

What is an IT/IS strategy?

Figure 5 provided a glance of its fundamental components. Essentially, an IS/IT strategy is composed of two parts: an IS component and an IT component. The IS strategy defines the organisation’s requirement or ‘demand’ for information and systems to support the overall strategy of the business. It is firmly grounded in the business, taking into consideration, both the competitive impact and alignment requirements of IT (Ward, J et al, 2002).

Additionally, gaining competitive advantage via IT depends on the interaction between industry conditions and internal capability to identify and exploit opportunities. (Johnston, H. et al, 1988)

Further, the resulted information systems strategy with implemented information systems infrastructure and processes, constitute the information systems resource for small business. The organisational performance impact of the information systems resource is commonly referred to as IT Business Value (Melville, Kraemer, & Gurbaxani, 2004). The process of IT business value generation is shown in Figure 6.
Strategic Alignment

Because information systems strategy guides information systems and business decisions, it seems reasonable to conclude that investigating the results of aligning information systems strategy and organisational strategy requires considering the effects of mutual alignment. In the late 1980s, a number of models were provided to evaluate the extent of alignment of business strategies and IS/IT strategies. While the concept of strategic alignment has been in use for many years, the Massachusetts Institute of Technology (MIT) Management in the 1990s, research project attached a particular meaning to the concept in the context of IS/IT management (Scott Morton, M.S, 1991). Their analysis is based on the assertion that the failure of organisations to realize value from IS/IT investments is, in part, as a result of lack of alignment between business and IS/IT strategies. They developed a model that represented the dynamic alignment between the business strategic context and the IT strategic context. This model is based on the building blocks of strategic integration and functional integration. Further, Henderson and Venkatraman (1993) explained that the alignment perspective should—at minimum—involves four domains of strategic choice: business strategy, organisational infrastructure and processes, IT strategy and IT infrastructure and processes (see Figure 7). They also discussed that a business strategy is the driver of both organisational design choice and the design of information systems infrastructure. Additionally, in case of organisational performance, Dedrick, Gurbaxani, and Kraemer (2004) assert that the results of information systems investment over the last decade demonstrate a significant positive organisational performance relationship, and Benjamin and Levinson (1993) conclude that performance depends on how information systems resource is integrated with organisational, technical, and business resources. In other words, the impact of information systems on performance may not be a direct one, but intermediated by other factors such as the alignment between information systems strategy and business strategy. Consequently, the factors such as, effective management (Broadbent and Weill, 1993), efficient resource usage, flexibility, adaptability, communication, and executive support should occur as a result of alignment (Henderson and Venkatraman, 1993).
CONCLUSION

Strategic importance of IT lies in its ability in developing the concept “value chain” in organisations by creating interdependent generic value activities comprising of elements such as suppliers, customers, production, finance etc. IT creates a linkage between these activities through a value chain. It transforms the value chain activities and also the product’s physical components and processes either by lowering cost of value activities or by product’s differentiation.

Further, a firm adopting IT can also enjoy innovation, growth, cost reduction, alliance, and differentiation advantages generated by the IT. On the other hand, IT enhances information processing, communication and alliance patterns. These characteristics could improve SMEs’ competitiveness in international markets as well as facilitate relationships with other firms within the same value chain.

We can conclude according to porter (2001), that IT does not meet the basic requirements to form a strategic resource since they are generally used and accessible to all firms. Therefore, IT does not represent a competitive advantage in itself unless it complements other strategic resources.

As a result, small businesses are investing in information and communication technologies to expand information systems applications to support their business strategy and thereby establish a competitive advantage based on the unique capability created in their markets. Consequently alignment between an organisation's business strategy and its information systems strategy positively affects business performance. On the other hand, the top management should play the role of strategy formulator to articulate the logic and choices pertaining to business strategy, whereas the role of the information systems manager should be that of a strategy implementer, who efficiently and effectively designs, implements the required information infrastructure and processes, that support the chosen business strategy (Henderson and Venkatraman, 1993).
BIBLIOGRAPHY


