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E-Business: A Value Chain Perspective

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ABSTRACT

Many organizations have successfully developed effective strategies for utilization of the e-commerce technology. Their success to gain competitive advantage is due to sound business strategies to create more value by proper deployment of e-commerce technology in various areas of their business processes. What are the major areas in which deployment of e-commerce technology has effectively added value, and what factors are responsible for its success? Many of these areas/factors, as discussed in the following sections, are effectively explained with a framework derived from corporate value-chain model.

INTRODUCTION

The growth of e-commerce has been astounding in various stages during the past several years. This has resulted in the development of a new generation of business, where millions of people and organizations are exchanging massive amounts of information each day directly and quickly (Evans and Wurster, 1999; Keough, 2001). Although many organizations have successfully transpired their business to gain competitive edge in this new era, some others were either left behind or have failed to successfully utilize the Internet to create an e-business environment. What are the underlying reasons why some companies are more successful in using e-commerce than others? What are the main factors that may lead to successful implementation of e-commerce? One effective approach to shed some light on these questions is to study the impact of this technology on the corporate value chain. The purpose of this paper is to explore areas in the value chain where application of this technology can add value most.

E-COMMERCE AND VALUE CHAIN MODEL

The value chain model, as originally demonstrated by Porter (1985), identifies nine strategically relevant activities that create value and reduce cost in a specific business. These nine value-creating activities consist of five primary activities and four support activities. The primary activities represent the sequence of bringing materials into the business (inbound logistics), converting them into final products (operations), shipping out final products (outbound logistics), marketing, and service. The support activities include procurement, technology development, human resource management, and firm infrastructure. This model is very helpful for identifying specific activities in business where competitive strategies can be applied and where information systems are most likely to have a strategic impact. Successful implementation of e-commerce in an organization should be based on a thorough understanding of the areas in the value chain where e-commerce can add value most. More importantly, to succeed in gaining competitive advantage, e-commerce is to be based on the overall corporate strategy (Slywotzky and Morrison 2000; Porter, 2001). Among a host of critical areas/factors in the value chain that major organizations have taken into consideration for establishing a sound e-commerce strategy include role of intermediaries, value pricing, logistics/purchasing, fulfillment, and value nets among others. Following sections present an analysis of these areas.

Role of Intermediaries

Intermediaries may be more important now than ever before because most of the rapidly growing Internet businesses are essentially middlemen (Gaullagher, 1999). For example, companies such as Amazon, CD-Now, Egghead.com, Cisco, and E*Trade can all be thought of as middlemen-resellers of products provided by some other source. Intermediaries will continue to be important because they provide consumers with selection, specialized distribution, and expertise (El Sawy et al., 1999). Some internal disintermediation may take place, in which employees will be removed if they add little value or even negative value to the distribution channel. For example, Dell, Cisco, and some online brokerages have eliminated staff in an attempt to realize cost savings in certain areas. Exhibit 1 illustrates an example of the role of intermediaries in the process of purchasing a book online from Amazon.com.

Value Pricing

In addition to employing e-commerce technology to enhance distribution channels, this technology is also used to redefine pricing strategies. Most companies pursuing a premium pricing strategy, for example, can use the Internet to better understand their customers. The Internet allows companies to price with far more precision than they can off-line and to create enormous value in the process. Value pricing involves several approaches. One approach to pricing involves businesses offering heavily discounted prices in an attempt to attract customers to their web sites. Another approach involves businesses transferring their "off-line" prices to the Internet. Neither of these approaches is very efficient because they do not maximize value. An attractive alternative approach is to utilize the Internet to track customers buying habits and adjust prices accordingly, thereby uncovering new market segments. The Internet allows companies to test prices continually in real time and measure customer responses. For example, in one study an electronics company reduced four products' prices by 7%, which increased sales from 5% to 20% (Baker et al 2001).

Brand Differentiation/Loyalty

Pricing is just one of several ways for a company to differentiate itself from the competition. Another way in which a company can differentiate itself is by promoting brand loyalty. Brand loyalty encourages repeat customers and helps to create long-term profitability.

A study performed by Bain & Company showed that in many industries, the high cost of acquiring customers made customer relationships unprofitable in the early years. In later years, however, companies could earn big returns because customer purchases would exceed the cost of servicing them. According to the study, increasing customer retention rates by 5% increased profits by 25% to 95% (Reichheld and Schefter, 2000). A major benefit of customer loyalty is that loyal customers often refer new customers to a supplier.

E-Procurement

E-commerce technology has provided organizations with the capabilities to improve the effectiveness and efficiency of the logistics and purchasing functions. Firms such as Wal-Mart and Amazon.com are currently outsourcing delivery, relying on logistics companies to deliver the product to the customer. Wal-Mart has even set up arrangements with smaller distributors such as Fingerhut and Books-A-Million to satisfy all facets of smaller orders (Kopczak, 2001).

E-procurement is the term currently used to denote the process of using the Internet to integrate supply chain partners through collaboration on key initiatives and to improve the purchasing process within organizations. A major benefit of e-procurement is the cost savings aspect. In fact, organizational costs of placing orders can be reduced by as much as 75% through utilization of the Internet. It also offers organizations the ability to use the Internet to search for the best pricing available. The overall advantage of practicing e-procurement is the fact the more automation allows partners quicker access to information. E-procurement also results in better communication among supply chain partners and consequently better supplier-customer relationships. Organizations are able to maintain tighter control over the purchasing process. Only those suppliers that organizations deem to be "preferred suppliers" will be able to transact business with the organization. Currently, e-procurement is being utilized primarily for the purchase of office supplies and items which are used for repair and maintenance of the organization's facilities (Smock, 2001).

E-Fulfillment

Today's marketplace offers new challenges to organizations. A key initiative organizations have undertaken to better compete is that of "E-fulfillment". It can alter the way customers purchase as well as the manner in which manufacturers deliver the product to consumers. Technology has also allowed distributors and suppliers to focus on providing value-added services to complement their product offering. E-Fulfillment contrasts with traditional fulfillment. Suppliers are now capable of accepting order online via the Internet and having the information sent directly into their order processing systems, something not possible via traditional fulfillment. Orders placed via e-fulfillment tend to be smaller than those placed via traditional fulfillment channels. The expected and actual lead times are shorter than those witnessed via traditional fulfillment (Kopczak, 2001).

Value Nets

Firms are continually seeking out new ways to attract and maintain customers. A development that has proven to be effective in attracting and servicing customers is that of the *Value Net* (Bovel & Martha, 2000). A value net is a network consisting of partnerships, which assists in the transfer of information among supply chain partners on a regular basis. The main benefit of a value net is the competitive advantage it offers to all participating organizations. The primary concept behind a value net is its ability to allow firms to address and solve customer problems, rather than just selling a product. A popular trend in the marketplace to address niche markets is that of the online-service company. This form of business interacts directly with the customers primarily via the Internet. The advantage of this form of business is that it provides enhanced service to the customer in the form of direct door-to-door delivery for customers. This is a distinct competitive advantage that firms are looking to exploit.

A FRAMEWORK FOR ANALYSIS

A sound e-commerce implementation requires top management commitment to clearly define corporate strategy in order to integrate Internet technologies into value-added activities. Exhibit 2 presents a framework for analysis of factors relevant to e-commerce implementation. This model consists of five major dimensions: 1) business opportunity, 2) corporate strategy, 3) Internet technologies, 4) value chain impact, and 5) areas of e-commerce implementation.

Business Opportunity

Various business opportunities may be created by changing the internal operating processes in order to improve services. The Internet technology facilitates implementation of the necessary changes in order to increase efficiency, cut costs, and improve channels of communication. At the same time, external forces are pressuring businesses to offer more service, 24 hours a day, 7 days a week. For example, in the distribution industry, customers expect more value-added services from its distributors which require changes in business processes through the Internet technology (El Sawy et al., 1999).

Corporate Strategy

Corporate strategy varies widely by company and type of business. However, Internet technology can provide universal benefits to both the business-to-consumer and business-to-business segments, including product/service differentiation, system integration, cost reduction, and expansion of market share. For example, Dell uses technology to differentiate its products by offering custom-built PCs over the Internet. Corporate strategy provides the framework for employing technology throughout an organization.

Internet Technologies

For the purpose of this study, Internet technologies refer to the Internet, Intranet, Extranet, and any other technology (e.g., customization technology) used in combination with Internet technology. The company web page usually contains links to the organization's Intranet and Extranet. The Intranet may be connected to a database that manages the storage of company data. The Extranet is way for companies to communicate with its external partners, while offering customization and privacy. Customization technologies enable businesses to provide specialized services.

Value Chain Impact

The integration of corporate strategy with Internet technologies often affects many relationships in the value chain. Technology may help to expand the role of a distributor, while reducing the role of other middlemen, such as wholesalers and suppliers. In addition, Internet technologies can change relationships in the value chain. For example, web sites provide customers with more information to compare services of different businesses. However, it can also be argued that Internet technology shifts bargaining power to suppliers and other intermediaries. Suppliers can "lock in" customers by using customer information to provide value-added services, such as automatic inventory replenishment.

E-Commerce Implementation Areas

Six major areas, among others, indicated in the literature to have bearing on successful implementation of e-commerce. These areas as discussed in a previous section are Intermediaries, value pricing, brand differentiation, e-procurement, e-fulfillment, and value nets. The degree of significance of each area may depend on specific organizational culture, technology structure and experience, and industry. One approach to examine validity of each area (a subject for future studies) is a systematic case study of major organizations that have gained considerable experience in e-commerce implementation.

NOTE: Full paper including exhibits, and references available from the authors upon request.

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