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E-business development for competitive advantages: a case study

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Abstract

Electronic business (e-business) today plays a major role in the world's economy. Forester Research estimated that, by 2003, the value of e-commerce of US and Europe will reach US$ 3 trillion. As the e-marketplace becomes more lucrative, it attracts new entrants and created turmoil in the market. There have been many spectacular successes and many failures.

This paper presents a study of e-business competitive advantage strategies using the success at Intel. After the initial deployment of its e-business pilot system in July 1998, Intel ramped US$ 1 billion sales on e-business each month for the rest of the year. Intel became the fifth most profitable company in the US in the year 2000, up from the rank of eighth in 1999. Despite the rapid decline in stock values of many Internet related companies and the recession, Intel is still successful. By the end of 2001, Intel was the seventh largest market capitalization company in the US.

Keywords: E-business; E-commerce; B2B; Supply chain; Value chain; Competitive advantage; Strategy; Extranet

1. Introduction

E-business has received much attention from entrepreneurs, executives, investors, and industry observers recently. As information technologies (IT) develop, novel ways of business process redesign (BPR) emerged, creating turmoil in the industry. Organizations today frequently integrate Internet technology to redesign processes in ways that strengthen their competitive advantages. Success breeds imitation and invites more entries.

The rapid expansion of e-commerce values in the past few years convinced many people that a new economy has emerged. Chairman of Microsoft, Bill Gates, frequently expressed his fear that Microsoft is about 2 years away from failure, that somewhere out there is a formidable competitor, unborn and unknown, who will use better business models to put companies like Microsoft into obsolescence. And the most successful new business models are probably those that can integrate Internet technology to all activities of the enterprise-wide value chain.

2. E-business concepts, strategies, and frameworks

Based on various types of trading partners, there are many categories of e-business, for example: Business to Business (B2B), Business to Consumer (B2C), Consumer to Business (C2B), Consumer to Consumer

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(C2C), People to People (P2P), Government to Citizen (G2C), Citizen to Government (C2G), Exchange to Exchange (E2E) and Intra-business (Organization Unit to Organization Unit). Without the use of face to face operations, all e-business transactions are performed electronically by using computer and communication networks. The three principal categories of e-business applications are:

1. Electronic markets or e-marketplaces: buying and selling goods and services.
2. Inter-organizational systems: facilitating inter- and intra-organization flow of goods, services, information, communication, and collaboration.
3. Customer service: providing customer service, help, handling complaints, tracking orders, etc. [13].

2.1. *Information systems strategies for competitive advantage*

Studying the evolution of business organizations has received much of attention in organization theory and MIS research [2,8]. Because organizations are not internally self-sufficient, they require resources from the environment, and thus become interdependent with those elements of the environment with which they transact. Organizational and ecological theorists [6,7] argued that organizations develop internal and external strategies which seek to minimize the uncertainty arising from dependence on the environment for resources.

As the technology advances and the e-business market develops and grows, market niches open and close frequently, creating rapid changes in the market. The prevalence of technical innovations may be regular, sporadic, or seldom; these patterns of change have different implications for business organizations. When innovations occur often, a niche may open up and the organization competes to take the advantage of cost savings and market penetration that often results in better profits and market share.

From the IS perspective, the value chain model [9] highlights interdependence activities in businesses where competitive strategies can be best applied and where IS are most likely to have strategic impact (Fig. 1).

As information technologies developed, novel ways of business process redesign emerged. Most organizations today use Internet technology to redesign their processes in ways that provide new competitive advantage. Through the infrastructure of existing B2B exchanges in the e-marketplaces, many organizations will eventually be able to integrate activities of their value chain encompassing suppliers, customers, and distribution channels within an industry or across industries. The potential of e-business is so great that many believe that e-business is the new economy that decides the success of future business organizations. Andy Grove, Chairman of Intel boldly stated in 1998: "*Within 5 years, all companies will be Internet companies or they would not be companies*" [4]. Despite the fact this prediction was greatly exaggerated, this statement showed a strong belief in the potential of e-business.

However, Porter [10] has argued that the key question is not whether to deploy e-business now to take advantage of Internet technology, but how to deploy it.

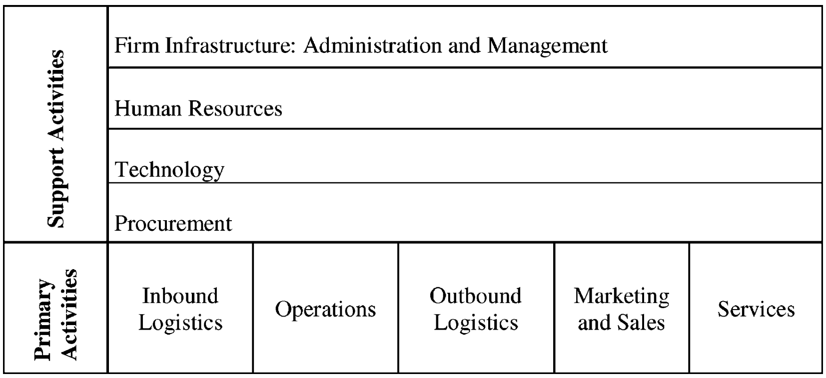

Fig. 1. The value chain model.