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Abstract

e-Business is the new, leading edge of electronic commerce. Organizations are using e-business applications such as enterprise resource planning, customer relationship management and e-procurement to transform traditional businesses into e-businesses. As organizations pursue an e-business strategy what are the five or six most important factors to consider? What are the opportunities? What are the threats? Answering these questions is the primary purpose of this paper. First, e-business is defined and placed in an historical context with its evolution through the electronic commerce concept. Then six critical success factors for developing e-business strategy are discussed and mini-case studies are used to illustrate their application in real businesses.

What is e-Business?

In the beginning there was EDI. Electronic data interchange – electronic transmission of commercial information between two trading partners – was the original e-commerce application However, EDI was technologically primitive, required complex standards to implement and was limited to organizations with pre-existing agreements.

In the mid-1990's, electronic commerce emerged as a term that was EDI as well as open buying and selling on electronic networks. For example, the Computer Desktop Encyclopedia (1995) defined electronic commerce as "Doing business on-line. It includes purchasing products via on-line services and the Internet as well as electronic data interchange (EDI), in which one company's computer queries and transmits purchase orders to another company's computer." Similarly, a short definition of electronic commerce that was widely used at this time was "The buying and selling of information, products and services via computer networks" (Kalakota and Whinston, 1996, p. 1).

In a 1997 marketing campaign IBM introduced the term e-business as "how network technologies can be used to transform key business processes conducted both within an organization, and externally with its customers, partners, stakeholders and suppliers. An element of e-business is e-commerce, which IBM defines more narrowly, as commercial transactions over the Internet only" (Wagstaff, 1997).

Some authors have adopted this perspective. For example, "e-business, in addition to encompassing e-commerce, includes both front- and back-office applications that form the engine for modern business . . . . e-Business is the overall strategy, and e-commerce is an extremely important facet of e-business" (Kalakota and Robinson, 1999, p. 4). Similarly:

> The term electronic commerce is restricting, however, and does not fully encompass the true nature of the many types of information exchanges occurring via telecommunication devices. The term electronic business also includes the exchange of information not related to the actual buying and selling of goods. Increasingly businesses are using electronic mechanisms to distribute information and provide customer support. These activities are not "commerce" activities; they are "business" activities. Thus the term electronic business is broader and may eventually replace the term electronic commerce. (Greenstein and Feinman, 1999, p. 2)

Others reject this separation of the concepts. Years before IBM promoted e-business as an all-encompassing term writers on the subject were using electronic commerce as IBM subsequently defined e-business. To these authors the terms are interchangeable:

- In 1995 Applegate and Gogan described how companies were using IT to support electronic commerce by engaging in a wide range of activities up and down the value chain both within and outside the organization.
- "Electronic commerce (e-commerce) is the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications networks . . . E-commerce includes the sell-buy relationships and transactions between companies, as well as the corporate processes that support the commerce within individual firms" (Zwass, 1996).
- "Electronic commerce is the ability to transact business on open networks such as the Internet. Electronic commerce includes intra-company, inter-company, and company-to-consumer processes" (Segev, 1996).

Perhaps the strongest opinion on the subject comes from the author of *Opening Digital Markets* in an article appropriately entitled "E-commerce? E-business? Who E-cares":

> The effort to separate the e-commerce and e-business concepts appears to have been

> driven by marketing motives and is dreadfully thin in substance. Here's the important thing: e-commerce, e-business or whatever else you may want to call it is a means to an end. The objectives, as with IT, are to improve or exploit unique business propositions – with the focus now being in the online world. Worrying about the definitions of those words, or about which is superior to the other, or about which is a subset of the other, is a silly little inside-the-beltway argument. (Mougayar, 1998a)

The preceding paragraphs demonstrate that there is no definitive definition of e-business. However, this paper adopts the "e-commerce = e-business" perspective and so what follows could just as easily been described as the six critical success factors for developing an e-commerce strategy. Formally this paper defines e-business as *the employment of electronic technologies to improve business performance*. e-Business is the use of these technologies to integrate information applications, speed up business processes, increase sales and decrease costs.

The Six Critical Success Factors of e-Business Strategy

Several authors of leading electronic commerce books have considered why organizations are compelled to pursue an e-business strategy and how to do so. For example:

- Walid Mougayar (1998b) describes eight "business catalysts" that are speeding up organizations' reactions to the impact of the Internet.
- In the opening pages of *e-Business: Roadmap for Success* Ravi Kalakota and Marcia Robinson (1999) outline "the eight rules of e-business" that organizations must consider in developing their e-business strategy.
- Six "driving forces of electronic commerce" are briefly described in *Electronic Commerce: A Managerial* Perspective by Turban, Lee, King and Chung (2000).
- In *Enterprise E-Commerce* Peter Fingar, Harsha Kumar and Tarun Sharma (2000) discuss 18 ways "how the Internet changes business".

These sources, and others (e.g., Applegate and Gogan, 1995; Seybold, 1998) offer a number of trends, forces, drivers, principles and advice for organizations considering an e-business strategy. This paper takes a different perspective. The purpose of this paper is to identify six critical success factors for developing an e-business strategy (see Table 1). For this purpose, a critical success factor is defined as "a factor that is considered critical to the success of the e-business strategy. Successful performance in this area will assure the success of the strategy and the attainment of the organization's goals" (adapted from O'Brien, 1999 p. G4).

Table 1. Six Critical Success Factors for Developing an e-Business Strategy
CSF1: Create a consumer-centric strategy.
CSF2: Embrace outsourcing to improve business performance.
CSF3: Act like a new entrant.
CSF4: Use information management to differentiate your product.
CSF5: Be part of an e-business community.
CSF6: Executive leadership is essential.

CSF1: Create a consumer-centric strategy.

An e-business recognizes that power is shifting to the consumer. In the one-to-many hierarchical information flow that characterized the Industrial Age, information flowed one way, from the producer to the consumers. The Internet has changed this in three important ways.

First the Internet allows consumers to talk to consumers. The Internet allows many-to-many communication flows. Consumer information sites such as The Consumer Democracy (www.consumerdemocracy.com) "is for information on products: quality, praise, complaints, ratings, features, descriptions, reviews, comparisons, discussion, problem reports, information, statistics, rankings, prices, rip-offs, bargains and shady affairs". eComplaints.com and planetfeedback.com offer similar forums and services.

Second, consumers can find and access information much easier than before. For the first time businesses must deal with a basic tenet of pure competition, a totally informed consumer. In a world where information is power, this can make sellers uncomfortable. Imagine the poor automobile salesperson who is greeted on the lot by a customer with a dealer invoice that shows the price the dealer paid for the car, easily available from automobile infomediaries such as Auto-by-Tel. These buyers won't let dealers make big markups anymore.

Third, and most significantly, the Internet enables the information flow to be reversed so customer-centric companies can pull information from consumers to improve and customize products. Compare this with the product-centric company that pushes products to consumers.

Companies that recognize this power shift to the customer will create a customer-centric strategy.

CSF 2: Embrace outsourcing to improve business performance.

For some time companies have outsourced secondary support functions such as payroll, network support and the company cafeteria. However, organizations have traditionally viewed core competencies (e.g., management, marketing, research and development) and primary support functions (e.g., distribution, manufacturing, human resources) as too important to outsource.

While core competencies remain resistant to outsourcing (appropriately so), interorganizational information systems linked by the Internet are enabling companies to outsource primary support services. Why? Reasons for the increasing use of outsourcing include:

- Outsourcing reduces costs and improves services because a firm that specialises in the service and/or engages in bulk buying can achieve cost efficiencies and service delivery that the outsourcing organization cannot.
- Outsourcing enables a company to scale production up and down quickly and cheaply, thus being more responsive to the ever-changing marketplace.
- Intangible benefits from outsourcing include: a beneficial change in corporate culture, access to premium resources and expertise the company could not afford on its own and the ability to implement world-class capabilities and technologies.
- Most significantly for e-business, outsourcing enables an organization to create the virtual enterprise, a key organizational form (see mini case study below).

> Case study: Nike is the world's largest shoe manufacturer. Despite this label, how many shoe-manufacturing plants does Nike own? None. How many trucks to move shoes from factories to stores does Nike own? Zero. Nike is a virtual company that, physically, is a building in Portland, Oregon containing management, shoe designers and marketers. Additionally, quality control inspectors at major manufacturing plants insure Nike's high standards are followed. All other services – manufacturing, distribution, information technology, etc. – are outsourced. Nike manages its worldwide production and distribution through interorganizational systems.
>
> Source: Applegate, McFarlan and McKenney (1996)

Outsourcing has always been used for cost reduction, but these points make clear that businesses are expecting more from outsourcing. Today outsourcing is expected to deliver improved business performance and it is doing so.

> Case study: When a customer orders a Dell Computer the component parts may come from several physical locations: the computer itself from a Dell assembly plant, the monitor from a Sony warehouse and the software from a distributor or manufacturer such as Symantec. United Parcel Service, not Dell, oversees the pickup, consolidation and delivery of the order. What arrives on the customer's doorstep, in a single delivery and in "From Dell" boxes, is an order which Dell has not been responsible for assembling but which meets or exceeds the customer's expectations for "service from Dell." Both distribution and inventory management have been outsourced to a package delivery company. Interorganizational information systems make it happen.

CSF 3: Act like a new entrant.

In the e-business marketplace new entrants have distinct advantages over existing businesses. Established companies tend to rely on simple formulas – lower costs, increase production, open new offices – to deal with impending change. These companies carry legacy systems, they refuse to cannibalize existing product lines and they don't take risks that innovate the marketplace. New entrants don't face these barriers and they are usually best at identifying where new value can be found in existing products and services (see case study below),

Transformational thinking is required. Companies will need to act like new entrants, continuously creating fundamental change. Senior management must nurture a healthy discomfort with the status quo, develop the ability to detect trends earlier than the competition, make rapid decisions and be agile enough to create or adopt new business models.

CSF 4: Use information management to differentiate your product.

The Information Age changes things. In *2020 Vision* Davis and Davidson (1991) suggest that economic life cycles are similar to human life cycles, moving through gestation, growth, maturity and aging stages. In 2000 the Information Age is in the first decade of the maturity stage. In this stage the patriarch of the Information Age – information – reigns supreme. The businesses that represent the "infostructure" of the Information Age – computers, telecommunications, network suppliers – are already well into the maturity stage. All other businesses – retail, media, financial services, government – are now following.

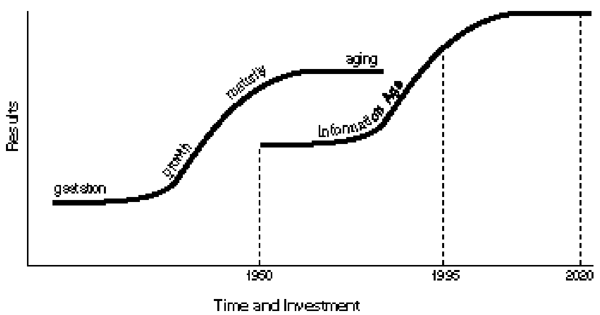
Case study: Barnes and Noble thought they had nothing to fear from this new start-up bookseller on the Internet, Amazon.com. Barnes and Noble believed they could wait, watch and learn from the mistakes of this upstart company which, after all, did not know anything about selling books. When the time was right, Barnes and Noble would open their own Internet bookstore and with their reputation and strength in the marketplace swamp Amazon.com.

Of course it didn't happen that way. Yes, Amazon.com founder Jeff Bezos did not know anything about traditional bookstore sales. But he did know technology and his business strategy, formed in the back of a van during a cross country move to Seattle, Washington, recognized that books were a commodity product that could be easily sold on-line and that customers were willing to trade the comfort of bookstore cafes and browsing for better-than-expected customer service and the convenience of ordering over the Internet.

As they say, the rest is history. Barnes and Noble has been forced to rush to the Web and offer tremendous discounts in order to claw back market share from Amazon.com. Their belief in traditional business practices and then unwillingness to recognize the changes interconnected technology can make has cost them dearly in their attempt to remain the market leader in book sales.

Source: (Bayers, 1999)

Figure 1. The Information Age Life Cycle



Information management will be a key definer of success in the Information Age. As Bill Gates (1999) argues: "The most meaningful way to differentiate your company from your competition ... is to do an outstanding job with information. How you gather, manage, and use information will determine whether you win or lose."

From now and into the future that we can plan for, value will be found in information-based products such as branding, customer relationships, supplier integration and the use of key information assets. Businesses must develop information-centric business strategies to participate in the Information Age economy.

Information alone is not enough, information technology is required to innovate, entertain and enhance the entire experience surrounding the product, from selection and ordering to receiving and service (see case study below).

Case study: Amazon.com is more than just a bookstore. Amazon.com delivers author interviews, customer book reviews, pre-release information and out-of-print books by special order. Back office systems and cookies deliver personalized book recommendations to shoppers who have purchased books from Amazon.com. A book recommendation agent tells the prospective buyer "Customers who bought this book also bought:". In all these cases information about the customer and information technology are being used to enhance the customer experience.

CSF 5: Be a part of an e-business community.

An e-business community links businesses, customers and suppliers to create a unique business organization. These e-business communities form as part of business alliances, cooperative networks or outsourcing arrangements in forming or implementing the e-business strategy. The key to success in the new Internet world order lies in being able to share rich information, form dynamic partnerships and make deals in real time (Anonymous, 2000). At the extreme, sometimes the formation of an e-business community is the e-business strategy (see mini case study).

Case study: Until the Internet, the process of purchasing a car had not changed almost since the automobile was invented. Auto-by-Tel changed that with a customer-centric process that rewards dealers who are able to respond to customer needs. A prospective customer uses Auto-by-Tel's information database to compare car models and to obtain dealer cost information. A customer then fills out a form specifying make and model, options, description of trade-in, need for loan financing, etc. Auto-by-Tel forwards that to a dealer in the customer's area, who prepares a quote for the customer's consideration. The value for the customer is access to the information required to bargain for the best deal. As the Chairman of Chrysler says "The customer is going to grab control of the process, and we're all going to salute smartly and do exactly what the customer tells us if we want to stay in business."

The customer doesn't pay Auto-by-Tel, the vendors do. Auto-by-Tel's e-business community includes car dealers, car insurance companies, loan companies and car accessories companies.

CSF6: Executive leadership is essential.

An e-business strategy doesn't happen without the leadership and commitment of the senior executives of the e-business. This would seem to be obvious, but too often the strategy is vaguely defined by executive management and left to the information systems or marketing department to implement.

Technologists have the in-depth knowledge about specific technologies to meet the identified needs, but strategies come first and for this leadership at the top is required. "Senior executives who rely on IT managers to relate technology to overall business strategy do so at their own peril. Executives [must] take responsibility for understanding the implications of up-and-coming technologies and anticipating when they'll affect business strategy." (Kalakota and Robinson, 1999, p. 21).

Conclusion

Few businesses will be able to avoid becoming an e-business. Those that refuse to change will be overrun by their competitors. Those that do accept the challenge will benefit from consideration and implementation of the critical success factors that have been described in this paper.

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