HOW E-COMMERCE IS RESHAPING OUR BUSINESS MODELS AND COORDINATING STRUCTURES: IMPLICATIONS FOR MANAGERIAL PRACTICE

Barbara R. Chrispin, California State University, Dominguez Hills
310.243.3579, Bchrispin@soma.csudh.edu
Dorothy M. Fisher, California State University, Dominguez Hills
310.243,3574, Dfisher@soma.csudh.edu
Steven A. Fisher, California State University, Long Beach
562.985.7965, Sfisher@csulb.edu

ABSTRACT

Electronic commerce (conducting business transactions over the Web) is growing at breathtaking speed. E-commerce is fundamentally altering the way we produce, consume, communicate, and play. This paper investigates how e-commerce is reshaping our business models and coordinating structures, and the implications it has for management practice.

THE IMPACT OF COORDINATION TECHNOLOGY ON THE ORGANIZATION

Information technology is the driving force behind many changes occurring in the economy as well as the changes in information-based activities that contribute to coordination. Whenever people work together, they must somehow communicate, make decisions, allocate resources and get products and services to the right place at the right time. It is in these heavily information-based activities that information technologies are having some of their most profound effects. By dramatically reducing the costs of coordination and increasing its speed and quality, these new technologies enable people to coordinate more effectively through new coordination intensive business structures. Malone and Rockart (1991), suggest that improved coordination technology will impact organizations in the following ways:

- A first-order effect of improved coordination technology is the substitution of information technology for human coordination.
- A second-order effect of improved coordination technology is an increase in the overall amount of coordination used, which leads to a reduction in cost.
- A third-order effect of reducing coordination costs is a shift towards new social and economic structures that are more coordination intensive. It is this last effect that is of interest to us. Our intent is to examine some of the new coordination intensive e-commerce strategies that are emerging and to analyze their effect on managerial practices.

NEW BUSINESS MODELS AND COORDINATING STRUCTURES

The impact of e-commerce on the economy extends beyond the dollar value of e-commerce activity. Businesses can use e-commerce to develop competitive advantages by providing more useful information, expanding choice, developing new services, streamlining procurement processes, and enhancing profitability. The Internet also imposes price discipline as customers have ready access to process and product information from many sources. This section describes some of the e-commerce strategies that have evolved in recent years.

Retail E-Commerce: Retailers have exploited many of the significant advantages of e-commerce. These ventures are created as Internet versions of traditional businesses and are involved in on-line selling to customers. Freed from the geographic confines and the costs of running actual "brick and mortar" stores, these firms can deliver an almost unlimited selection on request and can readily react and make changes in nearly real-time.

Selling on-line means more than simply providing alternative shopping sites to "bricks and mortar" stores; retail e-commerce can mean the expansion of existing markets and even the creation of new ones. The emergence of these ventures can provide increased information and choice as well as timesaving advantages for their customers. These advantages make it possible for buyers and sellers to come together in more efficient ways than would otherwise be possible in a traditional retail setting.

The move toward providing goods and services through a digital medium does not need to be an "all or nothing" proposition. The emergence of retail e-commerce has forced "brick and mortar" competitors to consider their own e-commerce strategies, and many now operate their own online stores. Established "bricks and mortar" firms such as Barnes & Noble and Charles Schwab are notable examples of successful retail e-commerce ventures.

Business-to-Business E-Commerce: Many of the same advantages that arise from retail e-commerce apply to business-to-business e-commerce. By opening immediate and convenient channels for communicating, exchanging, and selecting information, e-commerce is allowing firms to reconsider the functions they could perform "in-house" and which are best provided by others. The new technology has helped create new relationships and enabled firms to streamline and augment supply chain processes. These changes are enhancing the roles of logistics and financial intermediaries in the organization.

New technologies, most notably the Internet, give customers unprecedented power to obtain the lowest price. More importantly, however, it can also be used to deepen relationships and ultimately build far greater customer loyalty than before as the company develops an integrated value chain. This entails a process of collaboration that optimizes all internal and external activities involved in delivering greater perceived value to the ultimate customer.

Thus, the Internet's universal connectivity enables the firm to create a three way "information partnership" with both its suppliers and customers. The three parties become collaborators who together find ways of improving efficiency across the entire chain of supply and demand, and share the resultant benefits.

Business Intermediaries: Additionally, e-commerce capabilities are giving birth to entirely new classes of business intermediaries: aggregators, auctions, and exchanges. These new activities attack different inefficiencies and provide different opportunities.

- Aggregators pool supplier content to create a searchable one-stop shopping mall with predefined prices for buyers within a business community. These cyber-stores help geographically dispersed buyers and sellers find each other fast.
- Auctions create markets and reduce sellers' losses. Auctions pit buyer against buyer to purchase a seller's goods. On the Web, sellers and buyers can participate in multiple, real-time auctions simultaneously--without incurring physical-world search and travel costs.
- Exchanges create stable online trading markets. Stock exchanges, online exchanges provide vetted players with a trading venue defined by clear rules, industry-wide pricing, and open market information. An online industry spot market can operate at a fraction of the cost of a "bricks and mortar" market. National Transportation Exchange, Adaucion.com, Chemdex Corp, Metalsite and Marshall Industries are notable examples of business intermediaries.

Infomediaries: Over time these distinct business models will tend to merge together. What all these new businesses have in common is that, in one form or another, they consolidate buyers and sellers in markets that are fragmented either geographically or because of the absence of any dominant firms. Together, they can be described as "informediaries," a word coined by John Hagel of McKinley--intermediaries who sell information about a market and create a platform on which buyers and sellers can conduct business. Initially, informediaries were mainly a consumer phenomenon, typified by early Internet successes such as Amazon.Com. In the future the most likely profitable pure Internet companies, as well as the most influential, will be business-to-business infomediaries, which will reorganize entire industries. (*The Economists*, p.22)
These new business models and coordinating structures have the following implications for the Internet's effect on commercial activity. First, it shifts power from sellers to buyers by reducing the cost of changing suppliers and freely distributing a huge amount of price and product information. Second, the Internet reduces transaction costs and thus stimulates economic activity. Finally, the speed, range and accessibility of information on the Internet and the low cost of distributing and capturing it create new commercial possibilities.

THE EVOLUTION OF E-COMMERCE

Electronic commerce defined as buying and selling over a network has been around for more than two decades. The core activities for electronic commerce include advertising, browsing/selection, purchasing, selling, billing/invoicing, and payment. Traditional electronic commerce in the form of Electronic Data Interchange (EDI), file transfers, and bar-code systems are conducted over private value-added networks (VANs). Business-to-business EDI systems are predecessors of today's Internet-based e-commerce. Unlike the Internet, they are private, proprietary, and do not support browsing and advertising. EDI systems are a type of interorganizational system. An excellent example is GE Information Services' business-to-business networked EDI systems introduced in 1995. "The EDI software automates preparation and transmission of interorganizational purchase orders, invoices, shipment status documents, and payments" (http://www.geis.com). GE Information Services manages the world's largest electronic trading community of more than 40,000 trading partners. As e-commerce evolves, EDI systems have expanded beyond data interchange and offer higher level services such as transactions and workflow among organizations. These systems are expensive and require a substantial amount of collaboration between transacting partners and are not suitable for business-to-customer transactions.
The Internet is useful for selling goods and services directly to consumers. As the number of Web users increases, Internet commerce grows exponentially. Despite the publicity gained by companies such as E-Trade and Amazon.com, online business-to-business dominates the e-commerce. According Forrester Research, annual business-to-business e-commerce is projected to grow from $43 billion in 1998 to $1 trillion by 2003, while business-to-consumer e-commerce will increase from $7.8 billion in 1998 to $100 billion by 2003. [Business 2.0].
Internet-based commerce is easy to use and cheaper than EDI. Moreover, consumers can have 24/7 access to the ordering system and online catalog. With dynamic web pages, customers can check the inventory as well as the status of their orders online. One criticism is the lack of interaction. However, Lands' End Live now connects a shopper who clicks for help with a personal online shopper who synchronizes his/her browser to the shopper's browser so both can view the same items on their screens.

MANAGERIAL IMPLICATIONS OF E-COMMERCE

Although much of the e-commerce discussion concerns technical issues and the effects on the marketing channels, e-commerce is having a profound impact on the operating behavior of business. Companies engaged in e-commerce are in the process of undergoing some fundamental changes in the way they behave as organizations, the way they view themselves, and the things they define as valuable. Because of the relative newness of these changes it is difficult to identify all of the implications of e-commerce on management practices.

Management: Some have suggested that the ubiquity of information about customers, suppliers, and competitors internal processes may change the managerial climate. With changes in coordination technology, decision-making becomes more diffused throughout the organization. Those employees closest to the customers have more decision-making authority. Upper management becomes less involved in operational decisions and more concerned with strategic decision-making.

Companies that do well in e-commerce tend to have innovative leaders who are willing to take risks. They understand the need to make e-commerce an integrated strategic unit within the organization and provide the necessary resource support in the form of time and money. Furthermore, management at all levels must support the e-commerce initiative and agree to centralize it so that the company presents a coherent corporate message to everyone who visits their web site.

A company's model of governance, establishing control, accountability, responsibility and authority must be taken into account when creating ownership of the e-commerce initiative. A more centralized model, in which control lies with headquarters, stands a better chance of success if the leader of the initiative reports to the heads of IT and marketing. In a decentralized organization, in which each division or business unit operates with its own marketing and technology groups, the coordination of the e-commerce effort must originate from a central corporate source to insure a consistent message to the world. Companies must understand not only their own model of governance but also that of possible e-commerce partners, and determine whether their respective models are compatible.

Corporate Culture: The Internet is accelerating the rate of organizational change. Corporations frequently must redefine themselves to remain competitive. Oftentimes, this redefinition has a profound effect not just on business processes but also on the culture of the organization. For example, Egghead Software changed it business model from a "bricks and mortar" retailer to an e-commerce retailer. In such circumstances management must maintain a corporate culture that will foster innovation, loyalty, and the ability to weather monumental organizational changes.

Most organizations find it difficult to make the necessary cultural shifts to succeed in a more interactive business environment. The first and most crucial shift in thinking is to depart from the belief that any business is more or less an autonomous entity. The objective for large companies must be to become e-business hubs while the objective for smaller firms is ensure that they are vital spokes in that wheel. The companies involved must be willing to bring suppliers and customers deep into their process and to develop a similar understanding of their business partners' processes. This implies a degree of openness and transparency. The establishment of trust is also vital; partners who are constantly trying to second-guess each other lose vital speed.

Ecosystem: The Internet and related new e-business technologies now becoming available, allow firms to integrate their operations with outside organizations in ways previously unimaginable. The upshot is that companies no longer need to own every piece of the value chain to be successful. Indeed, vertical integration may be dangerous because a single company is unlikely to be equally good at each part of the chain.

Core Competencies: E-commerce makes it more important than ever for companies to understand what their "core competencies" are, what makes them distinctive, and how they can maintain that competitive advantage. They must find new ways of working with their partners to provide customers with a range of services that knit together so seamlessly that they amount to more than the sum of their parts.

Value and Emotion: After-the-sale support and services will become increasingly more important than the mere products themselves. Web pages will deliver customized services, such as help for consumers in making their choice or stock management for a business partner; organizations will collaborate and when needed to provide instant one-stop shopping.

Pricing: Demand will drive production via the extended value chain. Increasingly, fixed prices will give way to prices that reflect market conditions and recognize different kinds of customers. For example, bid-ask auction markets will proliferate, enabling commodity goods in oversupply to be sold efficiently at market-clearing prices instead of either clogging channels or being dumped. Perishable or time-sensitive goods, such as unused space in lorries or unsold media advertising, can be sold economically, allowing intelligent yield management across industries, even in highly fragmented markets

Sales and Distribution Systems: E-commerce is reducing the importance of certain types of sales and distribution functions. For example, the sale of individual airline tickets fits well in the world of the Internet. As a consequence, travel agents are shifting the focus of their efforts to areas that require more service, such as the sale of tours. As a consequence, sales forces will become smaller and more directed in their efforts.

Channel Conflict: E-commerce is disrupting the marketing channel. Typically, products go from manufacturers through distributors to retailers. However, products such as automobiles and PC's are being sold directly to consumers over the Net. As a result many marketing channels are facing disruptions that may result in their eventual breakup.

Increase Scale or Decrease Scale? Many Internet retailers have succeeded by offering a broad array of products and services that oftentimes cannot be matched by a conventional retailer. The shear size of product offerings generates enough sales to enable many Internet retailers to succeed. For example, Amazon.Com claims to be the largest bookstore in the world. Customers can engage in "one-stop" shopping. However, these retailers may find as information about their products, operations, and competitors becomes more available and cheaper to obtain it may be easier to identify products that are not profitable and do not fit into their desired product mix. As a consequence, these mass Internet retailers may shed some of their offerings and reduce their scale to enhance their profitability.

SUMMARY AND CONCLUSIONS

The attraction of increased sales and profitability has lured new firms as well as established organizations into the e-commerce arena. Yet, success in e-commerce is not automatic. Success requires management to confront a series of internal and external challenges. Based on the previous discussion Table 1 presents a SWOT analysis of factors that should be considered in while engaging in e-commerce.

TABLE 1: SWOT ANALYSIS FOR E-COMMERCE

Strengths	Weaknesses
+Unencumbered by bricks & mortar	-Challenges to closing sales online
+Lower cost distribution channel	-Easy to be on internet but difficult to make yourself known (drawing customers)
+Global channels easily established	-Implementation may be time-consuming and costly
+Start up costs may be relatively low	-Responding to internet requests on a timely basis
	-Lack of e-commerce vision and leadership
	-Limited bandwidth
	-Current lack of technology standards and compatibility
	-Employee resistance
	-Inability to meet customer expectations for quick response
	-Integration of back office functions

Opportunities	Threats
+Low cost sales channel for strong brand names	-Internet may have security problems,
+Direct communication with customers can enhance image and customer retention	-Increasing competition from new entrants and established companies
+Personalized marketing	-With no geographical boundaries brand name becomes the differentiating factor
+Improved customer service levels	-Issues of privacy
+Cross promotional opportunities	-Proposed governmental regulations and taxation
+Ubiquity of PCs	-Channel conflict
+High std. of disposable income	

REFERENCES

Supplied upon request.