

The Leap From Electronic Commerce to Electronic Business

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Abstract

Many people believe that electronic commerce and electronic business are the same. Electronic commerce is a part of electronic business; it is the part that has to do with buying and selling goods and services by using a data communications network instead of a paper or telephone (voice) system. First generation efforts to conduct electronic commerce proceeded the Internet. In the second generation most businesses progressed in electronic commerce to where they could conduct sales transactions electronically. Electronic commerce - procurement - is a major improvement in business management, but we need to marry this function with other capabilities to convert an organization to an electronic business.

We are now in the third generation of electronic commerce: the integration of information technology infrastructure to create an electronic business. But the leap to electronic business as an organizational strategy is not easy. Electronic business is not just the buying and selling of products and services electronically – it includes connections of these electronic processes to other parts of the organization that relate internally to finance, fulfillment, staffing, marketing, customer service, etc., and externally to customers and the supply chain. When an organization recognizes the strategic importance of this new business approach and embraces a new business model, thereby making a fundamental commitment to this process integration, it can move on to become a comprehensive electronic business.

I. Introduction

Electronic commerce means we move from the physical to the electronic as the primary means of conducting business. This movement is not really a new business model. It is easy to trace the origin of e-commerce to the invention of the telegraph some 150 years ago, which put the pony express rider out of business. Some years later the banking industry began electronic commerce by introducing the automatic teller machine and electronic funds transfer. Until recently most people never referred to this work as electronic commerce. More recently organizations realized the advantages of interconnecting computer-based information systems for fast, efficient, error-free transactions; electronic data interchange. Many of the largest global corporations, General Motors, General Electric, Boeing, Wal-Mart, and others use this technology to develop new interorganizational relationships and dramatically improve business efficiency.

A step-function change in the pace of electronic commerce proliferation occurred in 1993 with the opening of the Internet for commercial use. "As electronic commerce approaches the end of its beginning . ." (Zwass, 1996), electronic business is born from electronic commerce for many organizations. The Internet has made it possible for even very small businesses to have a web presence and engage in electronic commerce with large corporations and government agencies as well as consumers worldwide. Once an organization samples the advantages of electronic commerce, there is a strong incentive to electronically connect the entire business and significantly leverage the benefits.

Initially e-commerce Web sites were all custom designed and built for each new e-commerce venture. An entire new family of mostly start-up businesses came into being to create such Web sites. It didn't take long for the big guys in the business, IBM, Oracle, and Microsoft for example, to realize that this was a new business opportunity they could not let pass by.

So a new family of software packages were developed that allow for the tailoring of Web sites for customers starting with a generic reusable package rather than a reinvention.

Amazon.com's successful business form has been emulated by many: folders with tabs, frequently asked questions, help desk, shopping cart icon, ease of payment, privacy policy, order review, etc have now become standard features at least for many business-to-consumer e-businesses.

It is easy to conduct business transactions electronically. It is not so easy to become an electronic business. No one sat down and said lets design electronic business. Having a Web site is what many organizations thought was what it takes to do electronic business and transform a business: It is only the beginning of electronic commerce. The transition to an e-business comes from the integration of the web site to the upstream and downstream portions of an organization's business. Electronic business connects customers with suppliers and all the intermediaries that make up the value chain, in a way that has not been previously possible. Electronic business blurs the lines between organizations and requires that we question the roles and naming conventions of; buyer, seller, banker, manufacturer, supplier, delivery, customer service, . . . etc. Electronic business marries information technology with business processes.

“Automate or Die”, is the title of an article by Stacy Perman describing Dell Computer's highly automated e-business. “Innovate or die!” say Keen and McDonald in agreement with the imperative to do so fast or one will miss the window of opportunity. Automate, innovate, integrate, and network, the basic need to digitize business operations is the core of electronic business.

There is a new business model in the global economy, in spite of the fact that so many dot-coms failed recently, and it is based on electronic business. Every business should be an e-business, and technological integration is the yeast that makes the e-business bread. This new business model has to be the core of all businesses; this is the way the world will operate within the foreseeable future.

Fulfillment, delivering results, is what the early dot-coms fell short in providing and traditional brick and mortar business managers know is critical. The technology is easy; the

business processes are the critical portions of the e-business formula. A Web site without the upstream and downstream integration can be an attractive island, but the process integration of finances, suppliers, inventory, billing, fulfillment, customer service, and related/accessory products and services is what makes an electronic business.

II. The Generations

The evolution of electronic commerce to electronic business can be viewed in three periods or generations:

First Generation: Pre-Internet 1970s – 1992

In the 1970s the almost 50,000 independent travel agents in the U.S. began to conduct airline reservations electronically. Initially with American Airline's Sabre system and subsequently through other large carriers, to eventually where electronic reservations were the norm in the airline travel industry. Also during this period large retailers such as Sears, Wal-Mart, Kmart and others established electronic links with suppliers. Many of these initial links were in electronic data interchange format, and some with proprietary system protocols. This work represented the real beginning of supply chain integration, and resulted in tangible improvements in business efficiencies, reduced inventory, faster customer response, and improved profits. No one in this era called these business processes electronic commerce, but they were.

Second Generation: Internet Use 1993 - 1998

In 1993 the U.S. government open the Internet for commercial use. There was an explosion in the number of domain registrations, Web sites, Web pages and buying and selling activities. Initially Web sites were used to advertise products and services, post product and organizational information, and subsequently buying and selling. Business-to-business, business-to-consumer, and consumer-to-consumer business models were developed and there was substantial disintermediation and reintermediation in the supply chain.

Initially Web sites were custom designed, built and managed by individual business and organization owners. Later in this era, a whole new industry emerged: Web hosting. Generic Web software was developed and new businesses offered these packages to organizations that could quickly and easily develop Web sites with attractive formats and features, Other software programs were developed that could record transaction-level data in minute detail and thus provide a detailed account of every customer and potential customers' access to a Web site.

Toward the end of this era, customers were provided access to a seller's inventory, thus further integrating the supply chain.

The Third generation: Electronic Business: 1998 –

The leap from electronic commerce to electronic business occurs when there is true business process digital integration; upstream and downstream supply chain integration. All the processes and steps in conducting business electronically, to the maximum extent possible, must be integrated to have true electronic business. This includes: sales, customer ordering, manufacturers, suppliers, fulfillment, customer service, billing, payment, returns, banking and finance, and serendipitously market research.

When the electronic commerce platform (in many cases a Web site) is integrated with back-end information systems, there is true digital integration of a customer's order and inventory management. This integration offers tremendous advantages in business efficiencies by reduced inventory (true just-in-time inventory management), shortened cycle time, facilitation of mass customization, reduced administrative expenses, shortened cycle time, and improved customer service.

The net effect of true electronic business is to trade information for inventory. The transaction details and the customer profile can lead an organization to focus on customer needs, customer relationship management, and not on inventory.

III. Customer Service in Electronic Business

What is the strategy for doing this – converting e-commerce into e-business? Automate as much of the commerce chain as is physically possible without losing customer confidence and connection. Adopt the business process(s) that allows you to concentrate on customer satisfaction – the important and difficult part of a successful e-business. Yes, customers can place orders, make payment, select delivery options, and essentially perform most of the entire e-commerce process. We have all learned how to be order-entry clerks from the first use of bank automated teller machines. But the successful e-business must do more and especially be able to handle the problems when they occur (and they will) and create and maintain satisfied customers. Web sites can't possibly offer all options a customer might want to pursue; there will be exceptions such as unique order, service and delivery needs. Here is where the experienced organization will be distinguished from the dot-com start-up.

The premier pure e-business, Amazon.com, started out in book sales with a single warehouse and little inventory. The initial business model adopted was to rely almost totally on connections to suppliers, publishers and intermediaries for inventory and fulfillment. In short order Amazon discovered that they needed to spend some \$300 million on additional warehouses in order to offer the fulfillment and service required to make customers loyal to Amazon - the real strategy. The investment paid off in a phenomenal e-business on-time delivery record of 99%, which is still not good enough. (Business Week, February 21, 2000)

Almost 20 years ago Peters and Waterman helped us understand the importance of customer service. In their landmark study (*In search of Excellence*) of the best-run companies in the United States, the over arching factor that distinguished the best was their attention to customer service. If a business focuses on customer relationships, *relationship management*, rather than individual sales, long term success will result. The success of electronic business rests on customer relationships.

It has been well established that the cost of acquiring new customers is a substantial expense that can be lost on any given transaction if there is inattention to customer needs. All the

investments in technology and all the sophisticated management and information systems available will amount to little if customer service is neglected. E-business customers expect excellence in service, and why not? There are a multitude of competing Web sites and price-cutting offers available today.

How does a reputable business distinguish itself? Good customer service comes from a process-integrated organization. The integration of marketing, manufacturing, finance, and fulfillment, the end-to-end supply chain, is what leads to quality customer service. To deliver expeditiously and sell and service at low cost is what e-business customers expect. A Web site can do electronic commerce, but only a process-integrated organization can do electronic business. Why did Toys-R-Us and Borders contract with Amazon for their Web sales? Amazon's totally integrated e-process surely was a major factor.

Jupiter Communications 2000 survey of on-line buyers discovered that 72% of the respondents said that customer service is a critical factor in shopping satisfaction. And knowing it costs considerably less to retain a customer than to acquire a new one, their study of profitability indicates that companies can increase profits by almost 100% by retaining just 5% more of their customers. Customer Relationship Management systems are software workflow management-oriented programs that are available from a number of large vendors. These systems automate the entire process of servicing customers on a one-on-one relationship basis from promoting, order entry, shipping status, after sale service, returns, and customer retention. Organizations can either implement these systems in-house, or outsource the entire process to a service provider, which may also be the Web hosting firm.

IV. Shipping and Logistics

Every business makes errors. Sooner or later a customer will be disappointed; an order will not be delivered on time or will be incorrect in content or price. It is inevitable, and obvious, that even at a 99% on-time delivery and satisfaction rate some customers will not be initially satisfied. It is a matter of rapid recovery; correction, apology and re-fulfillment that distinguishes the successful electronic business. The exception, the transaction gone bad,

must be handled by some kind of personal contact by someone who has authority to be flexible, rule breaking, and innovative to the situation. When corrected, in many cases the initially disappointed customer will become an even more loyal customer as a result of the expeditious correction, which in turn may result in positive word-of-mouth advertising. Customer satisfaction results in repeat business (Amazon's repeat business is 73% of its sales), which minimizes the huge expense of marketing and customer acquisition.

Returns are inevitable. How an organization handles the returned order may also be key to customer satisfaction, as well as a way of maintaining profits. Reverse logistics is the process of planning, implementing and controlling the flow of merchandise back through the supply chain to capture as much product value and customer satisfaction as possible. Electronic business customers now expect liberal, no-hassle, and return-anything-for-any-reason policies to prevail. Some businesses see a liberal return policy as a competitive weapon, and plan for a high volume of returns and disposal in many cases. Reverse logistics can work for an organization if the supply chain is designed both forward and backwards; design the system from the customer back to the manufacturer on a step-by-step basis as well as the forward delivery process.

V. Process Integration

Many organizations see electronic commerce as a Web site or a strategy for using the Internet to do business. What they don't see, or focus on, is the need to reformulate the entire business process as an electronic business; a total *Enterprise Integration Architecture*. The integration of these processes with the web site - and the Internet, if that is the channel of communications - is where the real leverage is in return on investment. This is the way to seamlessly deliver customers to suppliers. The full benefits of e-business can only be realized when there is total process integration; a seamless end-to-end process from customer to supplier, connecting a Web site, with sales, inventory, manufacturing, suppliers, delivery, and customer service.

The technology needed is available and it works; it's almost never a technology issue when a business disappoints customers to the extent of losing them.

Electronic business is about building relationships between buyers and sellers. A Web site does not create a relationship; the process of ordering, payment, delivery, logistics and customer service is where relationships are created. For example, customer order status and tracking may not be of high priority to a business, but to customers an easy and effective system may be the difference between competitors that creates customer loyalty. Order status and tracking presents another customer relationship opportunity that builds loyalty through superior service, and this process should be an integral part of the digital enterprise integration.

An enterprise integration architecture constitutes a major cultural change and a substantial capital investment, and one that should be viewed as intellectual capital. By embedding all of the process of an organization, both internally and externally focused, into a common architecture (protocol) the opportunity for substantial leverage in process efficiency is available. There is a front-end investment, and the inevitable pain due to the change in culture, however the resulting pay-off, is substantial.

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