

How Electronic Commerce Is Reshaping Industry Structures

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Across the business landscape, individual companies and whole industries are reeling *from* the impact of unprecedented change brought about by electronic commerce (EC). Major new competitors have come out of nowhere, fueled by access to seemingly limitless capital. Previously unknown Davids are slaying Goliaths, at least in terms of shareholder value creation. ‘Amazon’ – a word formerly associated primarily with the region of South America surrounding the world’s largest river – now denotes one of the Internet’s major success stories and by extrapolation has become a verb, as in, Barnes and Noble was Amazonned.

And in many industries a new breed of interlopers – not Internet startups, but established firms from other industries – are crashing the party. These newcomers are leveraging their strengths, often in information technology, in innovative ways to gain competitive position. EDS, Intuit, and Microsoft immediately come to mind. EDS sought to position itself as a player in travel distribution. Intuit is leveraging personal financial software to partially displace banks, while Microsoft has established positions in numerous retail product categories, including travel, cars, and banking.

Moreover, there has been a shift in the capabilities required for success. In the distribution industry, for example, those competing by the old rules have awakened to discover that the accurate and timely capture and fulfillment of orders at competitive prices is now a threshold requirement. To gain competitive advantage, players such as Avnet Electronics are now leveraging their competencies in information processing and supply chain management both to increase revenue and as means of protecting their core businesses. Avnet provides EC-enabled material management demand creation services, both to defend its core distribution business and to create a significant new revenue stream.

In addition to transforming processes across individual companies’ value chains, electronic commerce is having a far greater transformative impact on industry structures – fundamentally redefining industries and accelerating the transformation of the world economy.

As a result, executives in many industries are being blindsided even while they ponder the question, „What does EC mean for my business? Should we view it as a new avenue for marketing and advertising or as a means for further streamlining and improving our supply chain? Is it an opportunity to create a mass-customized product offering or a vehicle for promoting and building loyalty? Is it an opportunity to dramatically reduce the cost of customer service or an opportunity to do product development collaboratively with our suppliers and customers?“

The correct answer is that while EC can and often does mean all these things, its implications are far more significant, requiring new objectives based on new strategies. Why? Because in many cases the industry itself is being literally redefined almost overnight: its value chain is being torn asunder, and the economics of transaction have given way to the economics of relationships. As a result, the forces governing competitive balance have been irrevocably disrupted. Just as executives had grasped the fact that communication and information technology should not be used to repave the cow paths to a given destination, they must now realize that communications/IT should not be used even to take the firm toward the same destination.

The impact of EC on industry structure varies from industry to industry, reflecting the existing structure, the value chain that transforms supplies and knowledge capital into finished goods and services, and the potential leverage available from process transformation. In some cases, the EC-driven reengineering of company processes can lead to the reengineering of industries. However, not all industries offer the same potential for such radical transformation. Industries differ in their underlying potential for change because they vary along six underlying parameters: new value propositions, new business models, vertical disintegration, margin erosion, disintermediation, and horizontal integration. In this article, we focus on these six parameters as we explore the impact of electronic commerce on industry structures.

New Value Propositions

The emergence of new value propositions fundamentally changes the basis of competition. Simply satisfying customers – formerly a basis for differentiation – has become a threshold criterion expected by all customers and delivered by all credible vendors. EC is proving to be a platform for delivering new value propositions for which there was latent demand that could not be economically satisfied. This is particularly evident in commodity businesses, such as transportation and logistics, which also have high information value for consumers. Over the last decade, transportation has become a commodity product, and transportation companies can no longer afford to compete on price. Instead, best-in-class logistics providers, such as FedEx, actively exploit electronic commerce to deliver new value propositions and differentiate themselves in a number of ways:

- They offer value-added products and services such as time-definite door-to-door services, carrier brokering, just-in-time delivery, and warehouse management.
- They take on full responsibility for their clients' logistics, order management, and customer service processes and operate multiclient networks, including shared cross-docks, shared warehouses, shared transportation resources, and shared IT systems.
- They provide information value such as tracking of clients' orders and shipments.
- They provide additional optimized and integrated solutions, such as supply chain modeling, as well as logistics pull-through services, such as reengineering and consulting.

Companies can deliver these full-service outsourcing offerings efficiently only by forming partner networks, for example, with technology providers or distributors with complementary competencies. Partners might provide standard technologies, facilitate process change, or leverage a strong regional market position. These partnerships, which require a high level of trust, can deliver new value to clients in many ways. For example:

- Integrators, such as FedEx, team up with state-of-the-art technology vendors, such as SAP, and build customer-intrusive IT solutions. This enables FedEx customers such as Monorail – a PC manufacturer – to operate virtually with a staff of 50 employees, relying on FedEx for its order management, warehouse, distribution, and call center functions.
- Similarly, cargo airlines such as Lufthansa Cargo build horizontally integrated alliances with their partner airlines. In this way, Lufthansa Cargo can offer a more global network than it could if it were limited to its hubs. In addition, it cooperates vertically with forwarders and logistics service providers to form a „virtual integrator.“ This business network can offer time-definite, door-to-door solutions and complex logistics services to compete with integrators such as FedEx.
- Logistics service providers such as Ryder partner with leading providers of supply chain software to create multiclient IT platforms. System integrators design and implement the client's logistics processes, while hardware vendors run the necessary system infrastructure.
- New players known as neo-disintermediaries are emerging in various industries. Exemplified by Avnet in the electronics industry, these companies play newly defined intermediating roles, leveraging electronic commerce by bundling the product portfolios of their customers and offering them in electronic marketplaces. They also take over responsibility for their clients' logistics, again partnering with other logistics and technology providers.

As supply chain issues and opportunities climb ever-higher on the agendas of senior executives, we will see the transportation industry transforming itself into a logistics and information services industry. Similarly in other industries, companies are rewriting the competitive rules of the game. The health care industry, for example, offers fertile ground for the introduction of new value propositions. Health care historically has been slow to adopt innovative applications of communications and information technology. Today, health care's use of business-to-business EC lags far behind other industries (such as shipping, high tech, and manufacturing), but is increasing, especially along the product supply chain from manufacturer to distributor/wholesaler to provider. Companies are increasingly using EC, via either traditional electronic data exchange (EDI) or the Internet, for catalogs, pricing, order placement and status, shipment and sales notification, and payments. Moreover, companies are seeking to move beyond treating episodes of illness to managing health across the continuum of care. In this context, electronic channels that can collect information on product usage patterns and customer behaviors provide a basis for new value propositions satisfying unmet needs.

Health care, with its myriad of segments and players and its reliance on information, would seem a natural fit for electronic commerce. In fact, the amount of online health care information available to consumers is exploding. More than 17 million people now use the Net to find medical information, according to the market research firm Cyber Dialogue. Some of this information is provided by businesses, which are reaching out to guide consumer decision-making, while at the same time consumers themselves are populating the Internet landscape with information from their own experiences. These emerging trends are suggestive of the opportunity for new consumer-oriented value propositions, as exemplified below.

The industry will create real added value by offering new products and services, as well as by enhancing the consumer experience, where there are many opportunities for improvement:

- Patients' information will follow them throughout the system, improving care by providing a complete record, as well as easing the administrative burden for all.
- Information on providers, benefits, drugs, and health will enable people to make informed choices, thus improving both customer satisfaction and health.

- Increasingly, many interactions between providers and patients, such as selecting providers, choosing benefit options, and scheduling appointments, will be conducted using EC.

At the same time, information will contribute to more valuable products. For example, patients' health information is already becoming a crucial resource for pharmaceutical companies such as Merck (through Medco) and Zeneca (through its SDMS subsidiary), which use it to demonstrate the effectiveness of their products. Medco, SDMS, United Health Care, and others also use this information in disease management programs, in which they identify high-risk patients, manage their care more closely, and intervene when necessary. Gathering and brokering this information are numerous firms including IMS (pharmaceutical sales data), MedStat (patient health data), and First Data Bank (drug interaction databases). Remote diagnosis and monitoring will be more prevalent as the Internet provides a common sunk-cost information infrastructure. In health care, as in the logistics industry, EC is supporting innovative value propositions that will eventually become threshold requirements.

The impact of EC on the transportation industry was largely unexpected. In the health care industry, EC's impact has been surprisingly delayed. In a third industry – media – prognosticators have been warning that EC's compelling value propositions would lead to the decline of industry incumbents. But the soothsayers have been wrong. Rather than leading to the demise of the publishing industry, EC is poised to usher in a new slate of value propositions. Perhaps most promising are those based on the exploitation of intimate customer data to optimize the discriminatory marketing and pricing of customized media streams (see sidebar: *The Media and the Net: Myths and Realities*).

New Business Models

In addition to defining new value propositions, electronic commerce is underlying a host of radically new business models. The outlines of these new models have proven hard to anticipate for a score of fledgling „dot-corn“ companies and industry veterans alike. IBM, Industry.net, and MCI, along with many others, patterned their first attempts at new EC-based business models too closely on their older predecessors – and failed to deliver real value to their prospective stakeholders.

The challenge for EC-based business model revolutionaries is to fit the model to specific characteristics of the industries served. One size does not fit all. Not only does the market structure of each industry favor a particular EC model, but the chosen EC model also alters the structure of the industry.

One of the most important factors in choosing a successful online business model for a given company is the power balance between buyers and sellers in the industry. How much buying power does the customer have? What is the level of concentration on the supplier side, i.e., the combined market share of the top few sellers? How fragmented is either side?

The Media and the Net: Myths and Realities

In the brave new world of digital media, all the usual fears concerning technology vs. culture not only are being subverted by unfolding events, but are actually being turned on their heads. For example, consider the following three value-destroying propositions usually directed against the Internet:

- *Fear No. 1* – The Internet will destroy the value of the „book“ franchise.

Reality – Imagine a world where no book ever has to go „out of print,“ where authors with something important to say have a relatively cheap medium in which to publish themselves, and where readers can get the works they want in any format they like.

- *Fear No. 2* – The Internet will destroy value for publishers and record companies by disintermediating marketing, sales, and distribution processes that have been the „hit factories“ of the past.

Reality – While Certain big-name artists will always be able to sell their work directly over the Internet, the majority of new or mid-list talent will still need the promotional pull provided by the traditional imprints and labels. In addition, as artists' incomes grow, so too do their needs for financial management and communication with their audiences. Who better to handle this than the companies who created the artists' brands?

- *Fear No. 3* – Piracy and counterfeiting will destroy value in any sector with digitized content.

Reality – This might be the one area in which current fears have some basis in current reality. Until issues of security and accountability are resolved, new-era digital content will be subject to age-old vices. Several create-your-own-content sites have already been subverted by the lack of a royalty accounting process that is adaptable to the cyber marketplace. In any event, the safeguards necessary to protect copyrighted material on the Internet will most likely be in place by the time the Internet becomes the primary medium of transmission and exchange.

Bertelsmann, the giant German media enterprise, predicts that the Internet will enable 20 percent of all its multibillion-dollar book sales by the middle of the next century. Movie studios will drastically cut preproduction

costs of films by going direct from the editing suite to the local cinema without the need for film printing and expensive copies.

Not only will these networks benefit the studios, but they will also shift the economics of film production in favor of independent studios and even independent film and video auteurs.

Huge, shared-services cyber clearing houses will emerge that will take care of all the royalty accounting needed by writers, musicians, and image artists who will be able to put their wares out for scrutiny without fear of losing either control or income.

Finally, the issue of data: the Internet and EC promise to offer a veritable revolution in the sourcing and use of customer data. Consider the amount of detailed customer data that Amazon.com possesses – and consider how people’s detailed reading preferences might predict their other tastes and buying habits. It is easy to see how „one-to-one“ marketing models, the emerging paradigm for the Internet, will bring to life the holy grail of cultural consumers everywhere: what we want, when we want it, in whatever format we want it.

Let the good times roll!

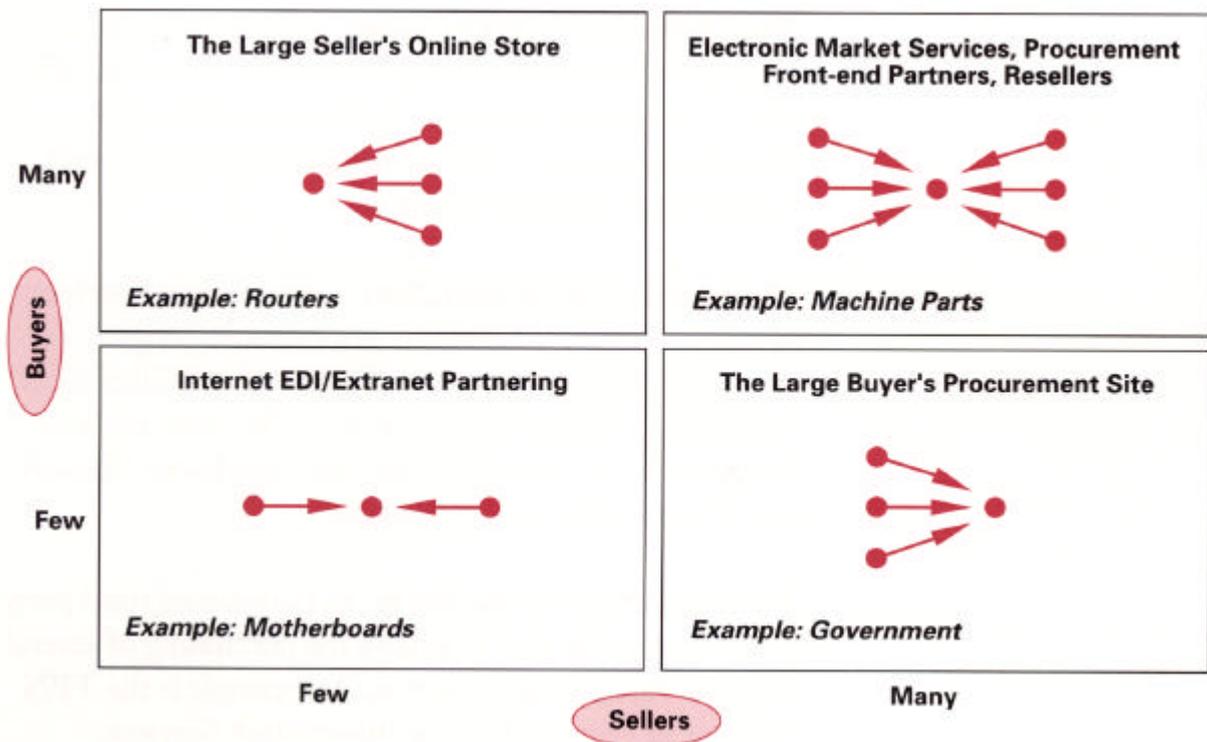
These factors determine which of the following seller/ buyer constellations best describes the relationship between buying and selling companies in an industry (Exhibit 1). Each constellation favors certain business models. (These are not exhaustive definitions of all business models, but merely a guide to the structural requirements of four of the more popular ones.)

The Large Seller Online Store: a proprietary online sales outlet for one supplier. For example, Cisco.com is the first web address for anybody interested in buying routers (infrastructure for internetworking). Since Cisco is a dominant supplier and everybody comes to its site anyway, it does not position itself in a multivendor marketplace, next to smaller competitors.

The Large Buyer’s Procurement Site: a Web site on the buyer’s side that consolidates preselected goods from smaller suppliers. Large buyers such as the US. federal government and Chevron maintain such sites. The suppliers have to maintain their online offerings next to their competitors’ products, sorted by the buyer’s department or product category. This solution rarely works for small buyers because their suppliers lack the motivation to keep the customized catalogs up-to-date.

Exhibit 1

Basic Buyer/Seller Power Constellations in Online Markets



The Internet EDI/Extranet Partnering: a constellation of two large parties, whose supply chains have often been integrated electronically, most through EDI. Examples include large computer manufacturers and their motherboard suppliers. This one-to-one relationship requires high setup efforts, but is becoming easier to establish thanks to Internet-based approaches.

In many-to-many situations, four business models have emerged for intermediaries and facilitators of Internet commerce:

The Web Reseller: an online superstore selling and servicing products from multiple vendors to the market. Examples include, Beyond.com, Grainger (industrial parts), N2K (Music Boulevard), and Outpost-com.

The Electronic Marketplace: a focused, unbiased trading environment where buyers and sellers find each other and conduct business. Examples include eBay (classifieds auctions), MetalSite (discussed below), and Polysort.com (plastics industry).

The Front-End Partnership: a joint online interface of small vendors. It functions as a customer magnet for specific product categories and generates qualified leads, which are passed on to its members who close the deal. Examples include the AutoWeb, Internet Travel Network, and 3Com's distribution channels.

The Procurement Service: an outsourced third party procurement site that facilitates the purchasing of several large- or medium-sized buyers. An example is the TPN Register of General Electric Information Services.

One of the industries in which EC is expected to spur the emergence of new business models, surprisingly, is the steel industry. Over the last decade, steel producers have gone through a period of real margin compression, and the sector has not earned its cost of capital across the cycle. During this period, service centers have continued to significantly displace the steel mills' direct sales to customers by offering shortened delivery times, decreased holding costs, and the capability to perform some processing. An estimated 60 percent of all steel (excepting tin) consumed in the United States now goes through an intermediary of some type to reach the customer.

The steel industry is mature and tradition-bound and is only starting to look at EC. Nonetheless, it holds significant potential for EC adoption and consequent change. While e-commerce will reestablish or strengthen direct linkages between the steel mills and their customers, it will not necessarily eliminate certain intermediary roles. Instead, it presents multiple opportunities to create value for all participants as well as for service providers to adopt new business models.

MetalSite, an emerging EC company in the steel industry, illustrates EC's potential scope and impact on the industry. The initial concept for MetalSite came from Weirton Steel and was based on its early experience in selling on the Web. MetalSite has since become an independent operating company, with start-up investment capital provided by several steel producers. MetalSite's basic premise is to serve as an unbiased electronic marketplace, efficiently bringing together buyers and sellers in the metals industry. MetalSite is open to approved buyers and sellers and has been specifically set up to avoid potential conflicts with its steel company investors. The investors expect to make a return on their investment on the basis of the fees charged for each transaction, additional services provided, and Web site advertising revenues.

Research by MetalSite indicated that the site could achieve competitive advantage by offering both buyers and sellers sufficient information to make informed decisions, combined with a robust process for executing transactions. Real-time information is provided through Cahners, a recognized industry content provider, and MetalSite itself provides information on activity on its site, as well as other special reports. An online buyer registration process efficiently connects buyers and sellers. Each supplier has the capability to create private view areas on the Web site to provide individual customers or groups specific information, such as pricing and production schedules.

The benefits of MetalSite will be apportioned to buyers and sellers. Both buyers and sellers will be driven toward greater product standardization. Buyers will have a broadened choice of suppliers. Sellers will have decreased manufacturing complexity. In the future, the site will also use an auction process to „sell“ additional mill production time for specific grades, allowing producers to better manage production runs and buyers to guarantee supplies. The emergence of MetalSite presages the widespread adoption of EC by the metals industry within the next three to five years.

Vertical Disintegration

Electronic commerce is challenging the traditional definition of what constitutes a company. The fundamental reason for assembling a group of individuals and the processes they execute within a single entity is to facilitate the accurate, efficient sharing of information according to common business rules within a trusted environment.

Electronic commerce creates the enabling infrastructure for such information exchanges between independent firms. Large volumes of highly complex information can be efficiently and reliably shared in a trusted environment under a common set of business rules enforced by the linkage of the underlying application systems. Dell's and Boeing's leverage of electronic commerce for process execution does not stop within the boundaries of either firm, but extends to its trading partners, both customers and suppliers. Dell seamlessly incorporates its suppliers into an integrated supply chain. Boeing integrated its customers and suppliers into the product development process for the 777. The ability to formulate such tight linkages with third parties creates a powerful incentive for reconsidering sourcing decisions in favor of third parties over internal options. The make-or-buy decision now rests on who has the competency to best execute the required activity.

At its extreme, the leverage of electronic commerce could lead to the creation of „virtual companies“ that are not part of either the production process or the traditional distribution process (i.e., they never take title to, or possession of, plant or inventory). They exist by their ability to control flows of information, and, in so doing, mediate as much between supply chain linkages as between suppliers and customers. Conditions in the oil industry seem ripe for the emergence of such a new breed of virtual company.

The current outlook for the oil industry is gloomy, and the future is far from certain. Traditional cost-cutting mechanisms can offer little additional relief, as there is relatively little fat left at most companies. One outcome has been megamergers, such as that proposed between Exxon and Mobil. For midsized oil companies, which lack the scale, focus, or portfolios of larger entities, a possible innovative response would be to massively outsource components of the value chain, thus becoming „virtual.“ The EC revolution could greatly reduce transactional and informational costs of such virtualization. The so-called „Wall Street refiners“ of the 1980s have already created historical precedent for virtual oil companies, and oilfield service companies have also been sharply increasing their role in the exploration and production sector. EC and other enabling technologies of the 1990s offer breakthrough efficiencies and transparencies to support this business model. Such firms may build shareholder value by sustaining their scope, continuing their growth agenda, and reducing costs through leverage of the scale economies obtained by fully engaging major suppliers. Reciprocally, the major suppliers have an interest in „sponsoring“ customers who might otherwise shrink or even disappear to expand demand for their services. Full and seamless integration of business processes through EC will further reduce overall costs, expand the universe of economic prospects, and increase overall activity levels.

In the steel industry, as next-generation brokerage Web sites embrace the transaction process connecting buyers and sellers, we expect that they will provide options for credit, billing, collections, receivables, financing, and logistics services, fulfilling the needs of buyers and sellers alike in one location. In effect these functions will have been outsourced from producers to the new brokers. This migration of functions in turn will lay the foundation for a „virtual“ supply chain, redefining current roles and creating new ones. For instance, a steel company could agree to provide a customer a fabricated part, using the intermediary's site to manage the process and identify the most cost-effective approach. Conversely, an end-user or a new service provider could actively manage the entire process from design and development to steel procurement and part fabrication (perhaps on a tolling basis), without ever owning any of the assets.

Margin Erosion

One of the gravest threats to EC, particularly for inefficient producers, is the erosion of margins due to increased market „perfection.“ Basic economic theory holds that in fully competitive markets, prices will decline to the point where only the most efficient companies will survive. In this process, in theory, prices will decline to the point where the survivors earn no profits at all. In reality, few companies face such unrestrained Darwinian economics. Most firms exercise some discretion in setting prices. They also create switching costs and reward loyalty; and oligopolies often prevail. Perhaps most importantly, buyers are not always fully informed, and as a result make „poor“ decisions (from the standpoint of price alone). As a nervous manager once said, „An informed consumer is our worst customer.“

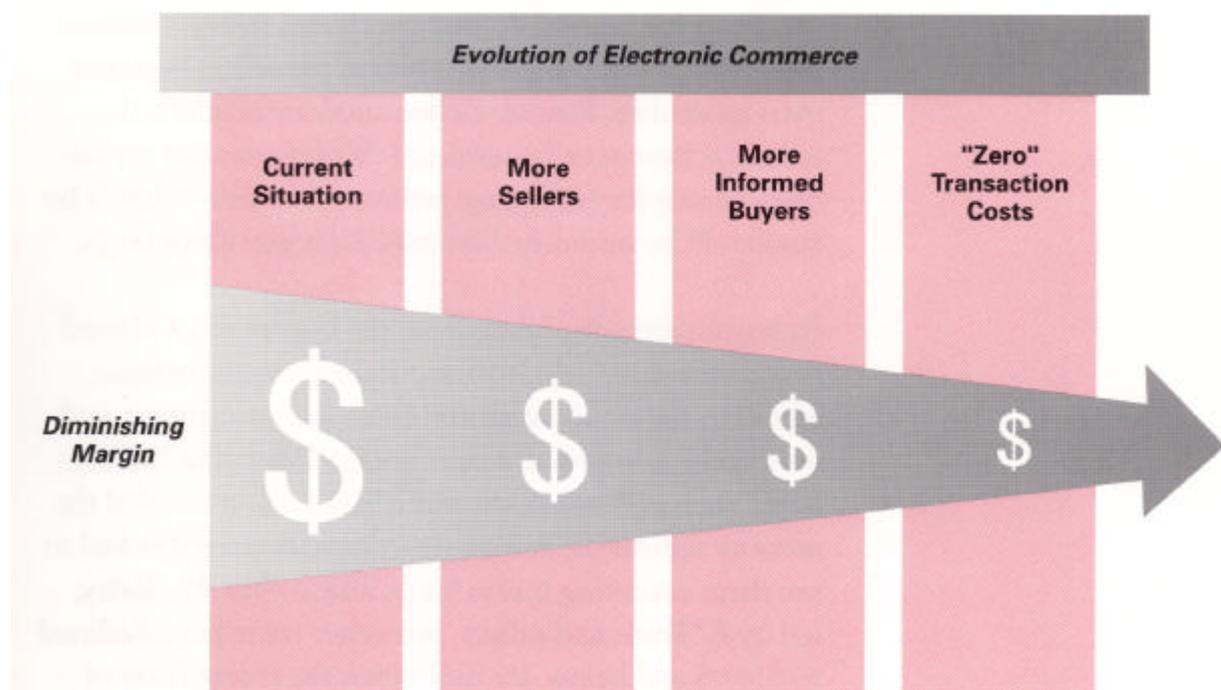
An EC-enabled world will be full of informed consumers. The current information imbalance between customers and suppliers will be rebalanced to a new equilibrium, more favorable to customers. Buyers will have far greater access to information for decision-making, allowing them to do exhaustive comparison shopping at infinitesimally low transaction costs. Information about vast ranges of goods and services, often at bargain-basement prices, will be only a few clicks away. And some online vendors are already lowering buyers' risks even further by offering low-price guarantees. Unlike in the physical world, where the effort involved in extensive price-checking keeps many buyers from either making exhaustive comparisons or redeeming these guarantees, in the EC-based world, such promises will have higher conversion rates. Add the potential for agent shopping – software programs that comb Web sites searching for buyers' desired goods and features at their preferred prices – and the situation for sellers becomes even more dire. Reverse online auctions conducted either by buyers or by unbiased third parties are yet another means for extracting producers' surplus value. The result will be seriously diminished margins (Exhibit 2).

Industries already reeling from the impact of EC-based margin erosion include financial services, automotive, software, personal computer, consumer electronics, and nonproduction procurement goods. When the „barbarians,“ such as Ameritrade and E*Trade, first invaded the security industries, industry participants were shocked to see them executing trades for as little as \$19.95. Today, led by E*Trade and others, prices per trade have declined to \$14.95 and below. By facilitating the comparison of mortgage offers, eLoan is letting consumers select the lowest price mortgages available. The Web sites of Autobyte and Edmunds so fully equip potential car buyers that they truly are more informed than the sales people and have reduced the profit on each car sale to a few hundred dollars.

Margin erosion is not a concern in all product categories. While people shop for complex shopping goods on the basis of price, they often make impulse purchases and buy replenishables on the basis of convenience. Strongly branded products, by definition, are less prone to pure price shopping than are generic products. And some products, such as music, art, and other media, must be experienced before or during the purchase process. Those branded sellers who are using online sales to complement other channel sales, such as print catalogs and retail stores, have little motivation to turn their online channels into discount factory outlets.

Exhibit 2

Margin Erosion in Electronic Commerce



In situations where margin erosion is inevitable due to competitive pressure, sellers will focus on customer retention. Loyalty programs mimicking those of the airlines and often leveraging private currencies will proliferate to increase buyer switching costs. Similarly sophisticated buyer tracking, combined with collaborative filtering technologies, will increase the benefit of concentrating purchases with a single buyer. These sellers will use databases to learn consumer preferences and offer highly targeted value-added recommendations for future purchases.

Margin erosion will not be limited to the business-to-consumer market. The EC-enabled revolution in procurement (see „How Electronic Commerce Is Transforming Business Processes“ in this issue of *Prism*) is driven as much by the opportunity to increase the efficiency of the process as to reduce the cost of purchased goods. The implementation of Web-enabled procurement systems, such as those of GE or Intercontinental Hotels, is reducing the cost of goods purchased by 5 to 15 percent. Such solutions, whether internally developed or from vendors such as Commerce One or Sterling Software, farther shift negotiating power to buyers through the creation of internal procurement sites and marketplaces.

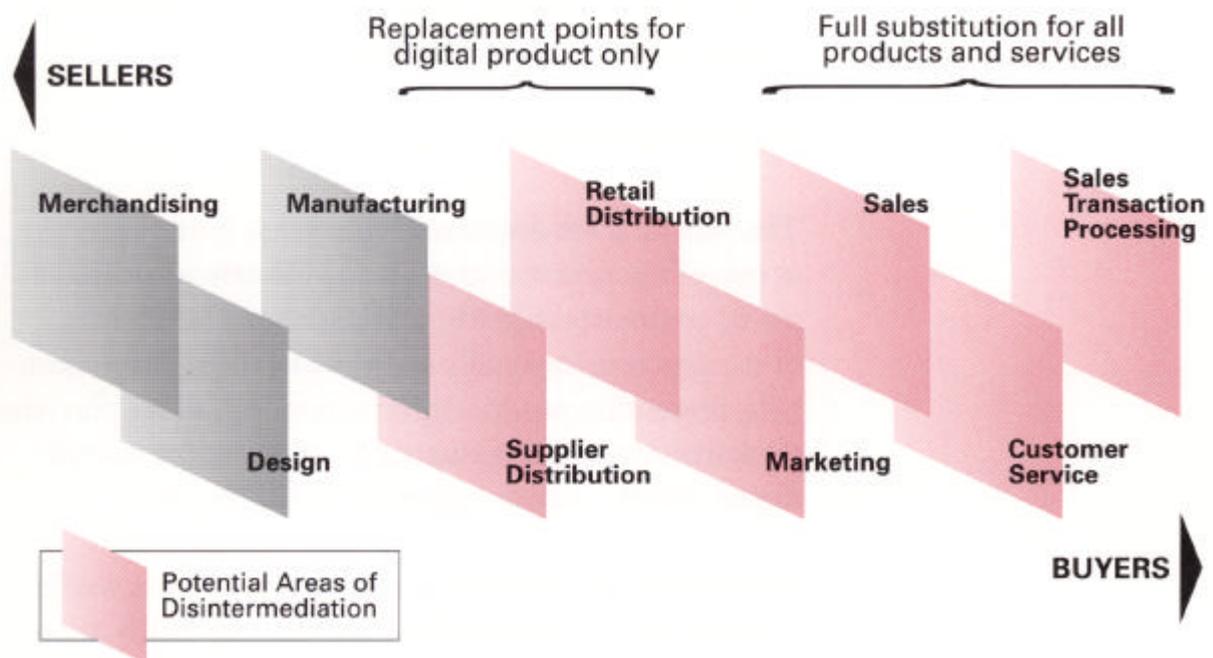
Disintermediation

The potential for disintermediation has been perceived as one of the primary strategic manifestations of electronic commerce. Clearly, a Web site can fulfill many of the processes normally executed by distribution channels: presenting product information, capturing purchase transactions, servicing customers, and – in the case of digital goods – delivering products (Exhibit 3).

Some observers warned early on that producers would immediately disintermediate their existing distribution channels, and that if they hesitated to do so out of concerns about cannibalizing their existing channel partners, new Web-based intermediaries would arise to seize this opportunity. In fact, this threat has been and continues to be overstated. Not all industries will experience this mode of restructuring. In many industries, distributor channels provide sustained value that cannot be readily duplicated online. For example, in the cosmetics industry, providing samples and subjective counseling regarding product applicability to an individual are key components of the sales process that cannot be replaced by even the most interactive and personalized Web sites now available. In the electronics industry, distributors such as Avnet and Marshall play crucial value-added roles that suppliers such as AMD and Intel do not want to fulfill. In this industry, the size of the market, the information support requirements, the potential for added value, and perhaps most importantly the suppliers' dependency on the channel for demand creation, has if anything strengthened the position of the entrenched intermediaries, who recognized the opportunity for creating new value propositions.

Exhibit 3

Opportunities for Disintermediation in Electronic Commerce



In such situations, negotiating power may favor the channel and not the supplier. This power balance depends in part on the companies involved. For example, suppliers with strong brands are in a better position to disintermediate, while channels similarly endowed are relatively immune from disintermediation. Powerfully branded retail stores focused on personal service, such as Saks Fifth Avenue, fall in to this category. In such cases, the channels have the enduring customer relationships and are driving demand; creating channel conflict by disintermediating would hurt the supplier more than the channel, particularly when there are readily available alternatives. Thus while Cisco has successfully championed its direct sales model, 3Com (Cisco's next-biggest competitor) provides product information to customers and lets them identify best configurations for their needs, but then passes sales on to its distribution partners.

Sony employs a similar referral model in consumer electronics. Sony itself does not sell directly to consumers – and thus does not deal with fulfillment issues or hassles with returns. While manufacturers position this type of model as lead support (that is, supporting the lead-generation process for their channel partners) for distributors, it can undermine the negotiating power of the channel in the long term. Finding customers is an uncertainty that many manufacturers have gladly handed off to their distribution channels. As the producers increasingly find the customers themselves, through their Web presences, the channel partners risk losing the power basis of customer

identification as a way to add value – and in so doing lose part of their margins.

So when is disintermediation most likely? One situation is when electronic commerce is used to reduce the information complexity previously brokered by the channel. The best example of such disintermediation is currently taking place in the travel industry. A crop of dot-corn companies has emerged over the past three years that allow travelers to search flight options and book reservations directly, without the involvement of travel agents.

Travelocity is the leader in this emerging segment; other players include Expedia and Preview Travel. While traveler direct services allow customers side-by-side comparisons of airline flights and prices, the airline sites are the real winners, as they are successfully disintermediating their dominant distribution channel, travel agents – simultaneously reducing commissions, lowering their distribution costs, and aggressively promoting their own Web sites for securing and managing customers. As a result, small travel agents serving the leisure segment are endangered, while business-oriented agencies such as American Express and Carlson are being forced to experiment with new business models and offer more compelling value propositions for an increasingly sophisticated customer base, while simultaneously increasing their operating efficiencies.

A similar story, is unfolding in the financial services industry. Intuit and Microsoft offer Personal Financial Software (PFS), which provides online access to banks. Rather than disintermediating a third-party channel, the two software companies are using electronic commerce to intermediate in the previously closed retail banking value chain. Banking customers using either Microsoft's Money or Intuit's Quicken effectively bank through a software interface that looks the same for every participating bank. If bank differentiation is reduced to an entry in a pull-down menu, product differentiation through branch image and personal service is weakened. PFS is not a fringe product category; in the United States, PFS is the second-most-used home PC application after word processing. And the banks, which formerly dealt with a fragmented base of retail customers, now negotiate with this new duopoly, which has already achieved critical mass. To make things worse for the banks, the Web sites of the two companies allow users side-by-side comparisons of financial services, accelerating the trend of commoditizing standard banking products.

Any industry in which the distribution channels rely on generating value and premiums on the basis of the information complexity of their goods and services now finds itself in trouble. Historically, travel agents, real estate brokers, car dealers, and bankers have sustained their business by providing information to which they had privileged access. Agents and brokers have been sitting at a screen and passing (quirkily coded) information to their clientele. The Internet, with its user-friendly Web interface, has turned the screen around to customers, allowing them self-service access and choice and thus endangering the fate of those without more substantive value propositions.

Horizontal Integration

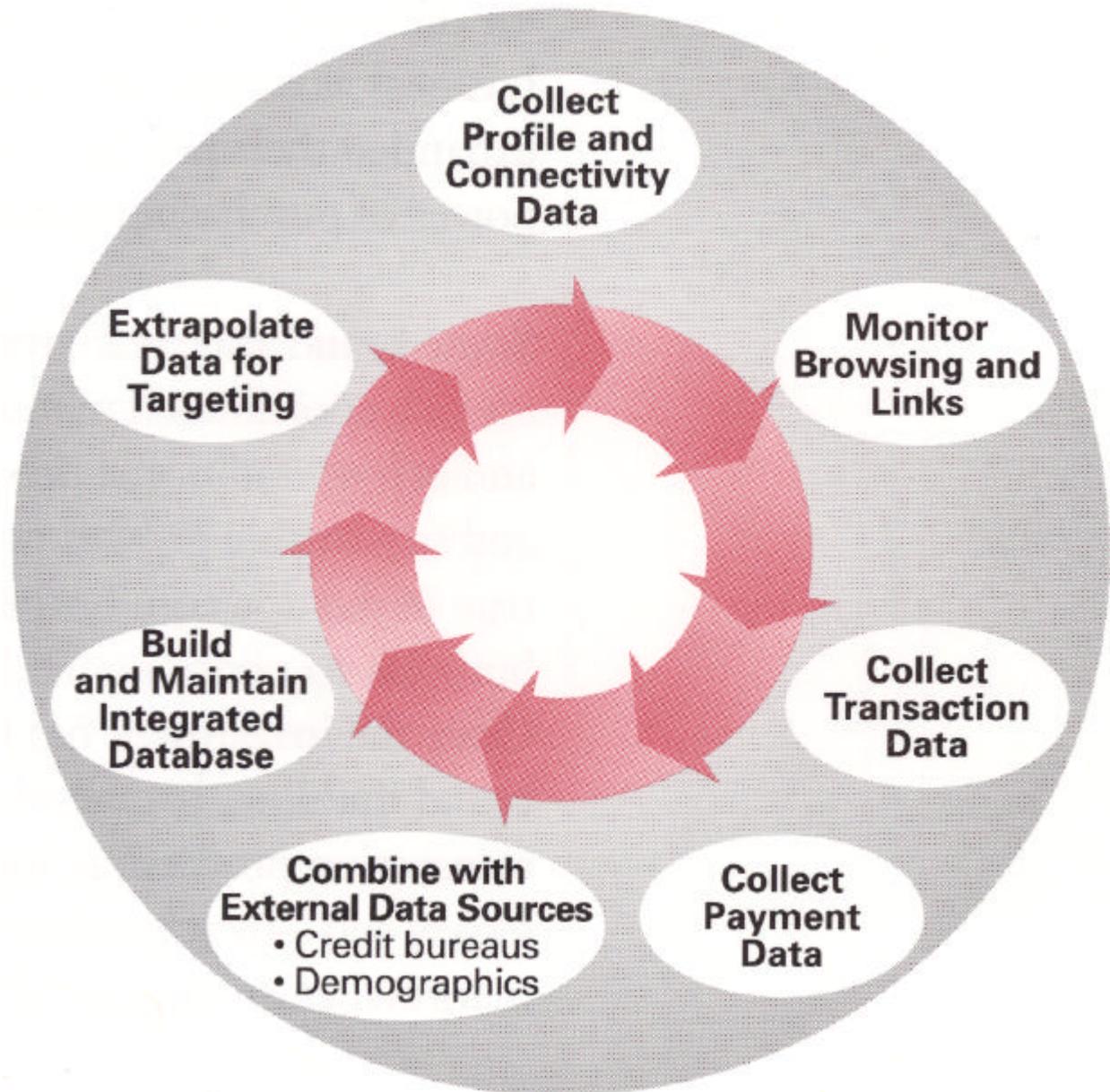
In the world of electronic commerce, while vertical disintegration will push companies to reduce the number of competencies they focus on, horizontal integration will push them to extend the leverage of these competencies and of their EC infrastructures to other, related product categories. EC offers companies a low-cost way to integrate product and service offerings from multiple sources to create innovative value propositions, expanding and/or simplifying customers' choices to address customers' true needs. A similar transformation, although for different reasons, occurred in the medical supplies business as companies such as Baxter Healthcare expanded their product offerings to meet the increasing power of purchasing groups.

Some brand and retail organizations can be expected to act in a coordinated manner, innovating on a new scale and across traditional product categories to create value and sustainable growth positions. This is particularly true of the dot-corn businesses emerging in both the business-to-consumer and business-to-business segments. Once the investment has been made in site development, brand building, back-end customer care, payment and transaction processing, loyalty programs, application servers, and – most importantly – the customer database, the marginal costs associated with horizontal integration to extend this infrastructure to other products, while not insignificant, is relatively minor.

Moreover, not only do the marginal costs for each product line extension decline, as would be expected, but the marginal per-product revenue actually increases, due to the increased marketing effectiveness of an integrated customer database, further enriched by the nearly limitless data that can be captured in an EC customer interaction and transaction model. For example, customer profile and demographic data is entered by the customer (no struggling to get warranty cards returned). Connectivity data captures which service provider is serving the customer, what type of system the customer is using, where the customer may have linked from, and all the customer's „footprints“ within the site, along with all transaction and payment processing data (Exhibit 4). Combined with data from external sources, such as credit bureaus and demographic and psychographic profiles, the integrated customer database offers predictive potential far greater than any offline analogue. As additional product types are added to the transaction stream, the predictive value associated with other product purchases further increases, creating a virtuous circle of data capture and leverage.

Exhibit 4

Integrated Customer Database Activities



In a study conducted by ADL four years ago, we identified „megaplayer“ strategies based on such horizontal integration and integrated database deployments. The typical approach of such figurative „800 pound gorillas“ is to target an industry with a high level of inefficiency in its existing distribution paradigm. The megaplayer then redefines the distribution paradigm, leveraging EC as a process transformation tool for customer acquisition, maintenance, and management by establishing itself as a new EC intermediary in the distribution channel. The next step is to establish competitive viability through a few early victories, leveraging an as-yet-primitive database and control of the customer interface. Once this electronic channel infrastructure is established, the megaplayer can leverage it for additional products. The key competencies necessary for this strategy are the application of communication and information technology to redefine the value chain of the targeted industry.

Microsoft, recognizing the rampant inefficiency associated with the travel distribution, developed Expedia, a leisure-oriented online travel agent. Expedia was only the lead product in a megaplayer strategy; subsequent targeted product categories have included residential real estate, automobiles, and financial services.

The same pattern is being played out at America and Europe Online. Here the megaplayer transaction model is being built on an interactive broadcast media model that uses programmed online content and real-time member communication services as magnets to attract a critical mass of potential customers, which in turn guarantees an

additional base of revenues from advertising. This captive audience then provides the basis for product and service sales.

The real significance of Amazon.com is not whether it can follow up its shot across the bow of Barnes and Noble by achieving dominance in book retailing, but whether it will be able to successfully reposition itself as an online Wal-Mart as it moves beyond books to **CDs**, video, travel services, or whatever comes next.

Healtheon was on its way to implementing the same type of megaplayer strategy in the health care industry. It was stalled, however, by the structural peculiarities of that industry, which prevented it from attaining the early victories necessary to establish a toehold and then begin replicating the crystalline market structure that EC-based horizontal integration strategies require.

While horizontal integration strategies may sound like a cyber version of the malls or department stores of yesterday, or even the „big box“ retailers of today, the paradigm is fundamentally different. The old model involved building traffic and leveraging scale infrastructure economies and then broadcasting demand generation messages to them. The new model requires the aggregation of eyeballs and the leverage of common infrastructure for the purpose of building an integrated customer database and targeting individualized demand-realization messages. The business is first and foremost the management of customer and product content to drive the one-to-one marketing of goods and services.

For incumbents, particularly single-product-category players, the threat is real and palpable. On one level, the threat is new megaplayers leveraging technology, integrated customer databases, a new industry value chain, and huge potential scale economies – increasingly fueled by deep pockets from public markets. The business models and enablers of these new competitors pose real strategic challenges and the potential for scorched-earth competitive battles as companies from different economic universes are capable of sustaining incalculable near-to medium-term losses as a means to long-term market dominance. Expedia recently announced that it does not expect to break even for another 10 years. This poses a frightening prospect, not just for Microsoft shareholders and independent leisure-oriented travel agents, but for multiple listing services, real estate agents, car dealers, banks, and incumbents in industries that are ripe for the reengineering of a component of their value chain.

Conclusion

Clearly, companies seeking to leverage electronic commerce by pursuing EC-enabled process improvements must also address fundamental issues of strategy. World Travel Partners (WTP), a leading global travel agency, could have looked at EC as simply an opportunity to extend its channel to more effectively serve its customers and compete against other travel agents. Instead, recognizing that the travel agency channel was endangered by the emergence of both pure-play online travel agents and airline direct channels, WTP reinvented itself by positioning itself as the low-cost, back-office fulfillment engine for the online travel sites of both agents and airlines. Defining such a strategy required recognizing the fundamental shift taking place in the travel distribution industry. Short of this realization, WTP might have focused on increasing the efficiency of its already endangered business model.

The organizations that are able to truly innovate and look beyond current industry structures and relationships have a tremendous opportunity to use EC to create unparalleled – and sustainable – growth engines. Others that simply look to EC to improve current business processes certainly will benefit in the short term, but may well be sowing the seeds of their own longer term demise. Those who are attempting to innovate and pioneer new business models and new value propositions, or simply to disintermediate existing channels, need to be equally cautious about ensuring that they adapt their value propositions to industry structures that can reasonably be extrapolated from current reality. Losers will seek to fit with today's structures; advanced players will seek to fit with tomorrow's structures. The real winners will take advantage of the emerging power shifts in the supply chain, while simultaneously propelling them.

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