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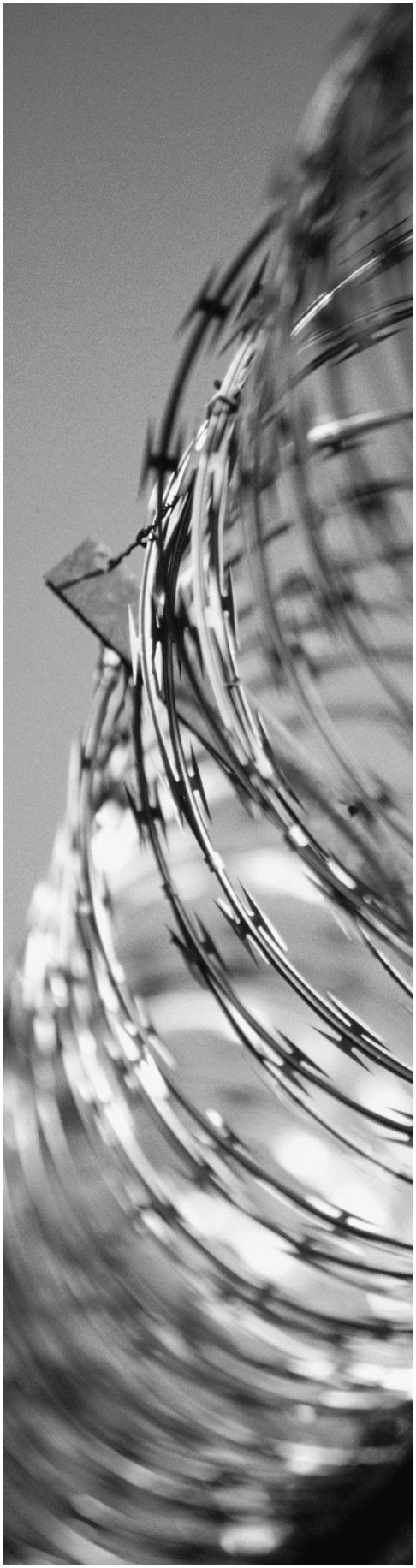

CHAPTER ONE

What Is E-Business?

In this chapter, the e-business phenomenon is defined, or perhaps better stated, its utopian allure qualified. Why are so many businesspersons, entrepreneurs, and investors being seduced, given that the Internet is insecure? More important, what are the implications for security when an enterprise's information machine is connected to the Internet? Further, how does one cross the *digital chasm* from the physical world to a virtual one in order to do e-business? Finally, the significance of virtual supply chains is discussed, along with the effects of critical e-business drivers. The chapter concludes by setting the stage for e-security, the critical success factor in pursuing e-business opportunities.

The E-Business Sweepstakes

Electronic business, or e-business, is the phenomenon that is simultaneously legitimizing the Internet as a mainstream communications medium and revolutionizing a new commercial business reality. The growth potential for creatively conceived and well-managed e-business ventures is unparalleled in the history of industry. *Electronic retail* (e-tail), also known as *business-to-consumer (B2C),* sales were estimated to be more than $12 billion in 1999, with $5.3 billion in the fourth quarter alone, according to official Census Bureau estimates. In a September 1999 study by Prudential Securities, analysts predicted that hypergrowth for e-tail sales would continue into the twenty-first century, beginning with 130 percent

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growth and leveling off to about 45 percent by 2004. This equates to a compound average growth rate (CAGR) of approximately 69 percent. Prudential Securities research also suggests that annual e-tail sales should reach $157 billion by 2004. Forrester Research predictions are even more optimistic. Forrester estimates that sales resulting from purchases of goods and services through *online stores* will nearly double each year through 2004. In other words, online consumer sales are expected to reach $184 billion in 2004.

Speaking of hypergrowth, *business-to-business* (B2B) e-commerce, whereby businesses sell directly to one another via the Internet, was five times as large as business-to-consumer e-commerce, or $43 billion in March of 1998, according to a report in *Business Week.* Forrester Research predicts that B2B will mushroom to $2.7 trillion by 2004. That's nearly 15 times the size of the consumer e-commerce market projection! In comparison, Gartner Group's predictions are off the chart. The consulting firm expects B2B e-commerce to be almost three times the Forrester prognostication or $7.4 trillion.

Following are some other interesting trends that are fueling the Internet migration.

- Of the 100 million people connected to the Internet, most had never heard of it four years earlier.
- According to an April, 1998, federal government report, "The Emerging Digital Economy," the Internet's *rate of adoption* outpaces all other technologies that preceded it. For example, radio was in existence for 38 years before 50 million people owned one. Similarly, television was around for 13 years before 50 million people were able to watch *American Bandstand.* And, after the first PCs embarked on the mainstream, 16 years were needed to reach that threshold.
- Four years after the Internet became *truly* open to the public—the National Science Foundation released restrictions barring commercial use of the Internet in 1991—50 million individuals were online by 1997. At this rate, especially with 52,000 *Americans* logging onto the Internet for the first time every day, experts believe that 1 billion people will be online worldwide by 2005.
- In spite of the dot-com flameout, companies are still looking to streamline operations by harnessing the Web, according to a June 20, 2001 report in the *Washington Post.*

So at this juncture, the question is not *whether* you should go online but *when* and to *what extent.*

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Caesars of E-Business: An Embattled Business Culture

Like the celebrated emperors who ruled the Roman Empire, the new Caesars of e-business are forging business empires through new, *virtual business* channels and as a result are becoming a force at the top of the business world. Loosely defined, an empire is an economic, social, or political domain that is controlled by a *single* entity. Amazon.com, Auto-by-Tel, Beyond.com, Barnes and Noble, CDNow, eBay, and E-Trade are among the new Internet Caesars that appear to be conquering this new *cyber*business world by building an empire in their respective online product or service categories.

Amazon.com became the first *online bookstore* when it hung up its virtual shingle in 1995. In 1996, its first year of operation, it recorded sales of $16 million. A year later, sales had grown nearly tenfold, reaching $148 million. It is estimated that Amazon will realize $2.8 billion in sales in all product categories—books, CDs, movies, and so on—in 2003!

Amazon's literal overnight success became too compelling to pass up. Barnes and Noble, a bricks-and-mortar establishment, set up its own online shop to compete in the seemingly fast-growing book market in 1997. Online book sales are expected to reach $3 billion by 2003.

Most industry analysts are ready to concede the online book empire to Amazon and Barnes and Noble. Through Amazon alone, its 11 million customers can select from more than 10 million titles, consisting of 1.5 million in-print books in the United States and 9 million hard-to-find and out-of-print books.

On other online product retail fronts, Beyond.com is building its business empire in the *online software sales* category, with more than 48,000 software application product titles. Similarly, CDNow offers more than 325,000 CD titles to its online customers, and eBay has locked up the *online auction* front for trading personal items of wealth. Amazon.com and eBay are well on their way to building business empires, perhaps reaching that coveted milestone of category killers for book sales and auction trading, respectively (see Table 1–1).

Feeling the effects of Barnes and Noble's actions, Amazon responded with incisive moves into other areas. In June 1998, Amazon.com opened its music store, going head to head with CDNow. This move was followed by a rollout of virtual toy and video stores, positioning Amazon.com for direct competition with eToys and Reel.com, respectively. Amazon didn't stop here. It also set up shop in the online greeting cards, consumer electronics, and auction areas. Within 90 days of launching its music store, Amazon became the premier online

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Table 1-1 Competitors in the Online Market Segments (Product Categories)

Product Category (Market)	Potential Category Killers		
	Original E-Tailer	E-Tailer Crossover	Traditional Retailer
Books	Amazon.com	Buy.com	Barnes and Noble (Bn.com)
Music (CDs, etc.)	CDNow	Amazon.com	Tower Records
Videos	Reel.com	Amazon.com	Blockbuster Videos
PC hardware	Buy.com	Egghead	CompUSA, Dell, Gateway, Compaq
Toys	eToys	Amazon.com	Toys-R-Us, Wal-Mart, KayBee
Software	Beyond.com	Amazon.com Bn.com	CompUSA, Egghead
Autos	Autobytel.com, Cars.com, Autoweb.com	N/A	Harley-Davidson
Consumer electronics	800.com	Amazon.com	Best Buy, Circuit City

music retailer; within 6 weeks of launch, the premier online video retailer. Not to be outgunned, CDNow reciprocated by opening online movie and book businesses. Other online retailers began following this strategy.

No sooner than the *online* giants begin moving in on one another's turf, the *traditional* retailers begin to exert their *physical* muscle in the virtual world of compelling shopping malls and online stores. Blockbuster set up a Web site to sell movies. Toys-R-Us raised no eyebrows when it decided to go online to challenge eToys in the online toy category. Tower Records moved into CDNow's and Amazon's territory to challenge in the music arenas. The incursions of the online retailers and the invasions of the traditional retailers make for a crowded virtual marketplace, indeed.

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The Lure Of Overnight Successes

While the mega-e-tailers were jostling for control of their respective online empires, roughly 30,000 e-tailers sprang up like Christmas lights to ply their wares through the Web. The overnight success of Amazon, Barnes and Noble, Dell Computers, Auto-By-Tel, and other Internet retailers was an intoxicating lure to opportunistic Internet entrepreneurs looking to capture that magic formula. Unfortunately, dot-coms failed by the thousands. In fact, in the fourth quarter of 2000, industry analysts predicted that more than 80 percent of e-tailers, or 25,000 companies, would not succeed in the cutthroat online retail business. Those that were absorbed by bigger concerns were fortunate, to say the least. However, the debacle of the dot-com businesses and other adverse market forces impacted high-tech stocks in general, causing stocks in other high-tech areas, such as Microsoft and Cisco, to sustain a decline in market value.

The five-year period ending December 2001 saw Internet giants completing their initial public offerings (IPO) and entrepreneurs, management, venture capitalists, and other investors who were holding stock options become overnight millionaires, even billionaires! Amazon completed its IPO on May 15, 1997, after opening its virtual doors in July 1995. The stock price reached $113 a share in December 1999! A year later, the stock was trading at approximately $20 a share; by December 2001, $10 a share! This is truly phenomenal, given the fact that Amazon has been in operation for only six years. Even more amazing, as the dot-com shakeout continues, forecasters are expecting solid growth in all online product categories. The failings of the dot-coms and the debacle of high-tech stocks were inevitable, if not expected. Some industry analysts point out that the recent adversity is a natural correction of a marketplace, which is returning to equilibrium. The overvalued capitalization, inflated stock prices, and exponential returns from the IPO have simply run their course.

Oddly enough, investors quickly understood that to play in the online retail game, an infusion of capital would be needed to develop online business models successfully. In general, virtual supply chains represent online infrastructure and related processes that harness the attributes of the Internet for the purpose of delivering goods and services, emulating physical supply chain infrastructure and processes of *traditional* retail with software application processes and network infrastructures for *online* retail. The challenge for online retailers is to craft an automated business system that will garner success online. Investors, betting that several years of heavy capitalization will ultimately achieve acceptable

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returns in the foreseeable future, are therefore willing to live with substantially undervalued stock prices in the near term for riches in the future. Besides, investors who held onto their shares since the IPO have made and lost a ton of money.

Without doubt, the mystique and the attraction of the Internet as a viable business channel have been glorified and substantiated by the innovative pioneering of the super-e-tailers, the Caesars of the Internet economy. But as mentioned, business-to-business e-commerce is expected to be 10 to 15 times larger than the retail online business. Moreover, companies collaborate over the Internet for purposes other than direct selling, such as to exchange information with employees or strategic business partners. Thus, companies interacting online to provide products and services directly or to gain strategic and/or competitive advantage realize the fullest, perhaps the most practical, intent of the Internet. How this will be achieved from company to company will vary significantly.

Crossing the Digital Chasm

No matter what e-business model you choose—B2C, B2B, an intranet for internal use, or an extranet for strategic external entities, such as business partners—you must fashion the requisite computer application(s) in order to pursue e-business opportunities successfully. To qualify as an e-business application, it must allow access to the intellectual capital, or information assets, of the enterprise while operating safely on the Internet. In general, e-business application development depends on four critical factors: where information assets reside, how they are processed, who manages the application, who is beneficiary; in short, the database, applications, IT/operating staff and the end user (see Figure 1–1). Critical e-business drivers include streamlining physical operating processes, reducing operating costs, delivering just-in-time information, and increasing services to customers (see Figure 1–2).

No matter how you slice it, the development of e-business applications is not a walk in the park. Internet-enabling technologies facilitate the achievement of this end and even make it fashionable. However, determining which of the vast amounts of information capital you deploy for a given e-business application may be a straightforward process or as complicated as enterprise application integration (EAI). EAI is a process that identifies and integrates enterprise computer applications or databases, typically in dissimilar formats, into a derivative, or new, computer application using middleware models and related technologies such that the resulting application is accessible through a graphical user interface (GUI).

The critical first step in e-business application development is deciding *what* business activity would be more effective as an e-business application. In

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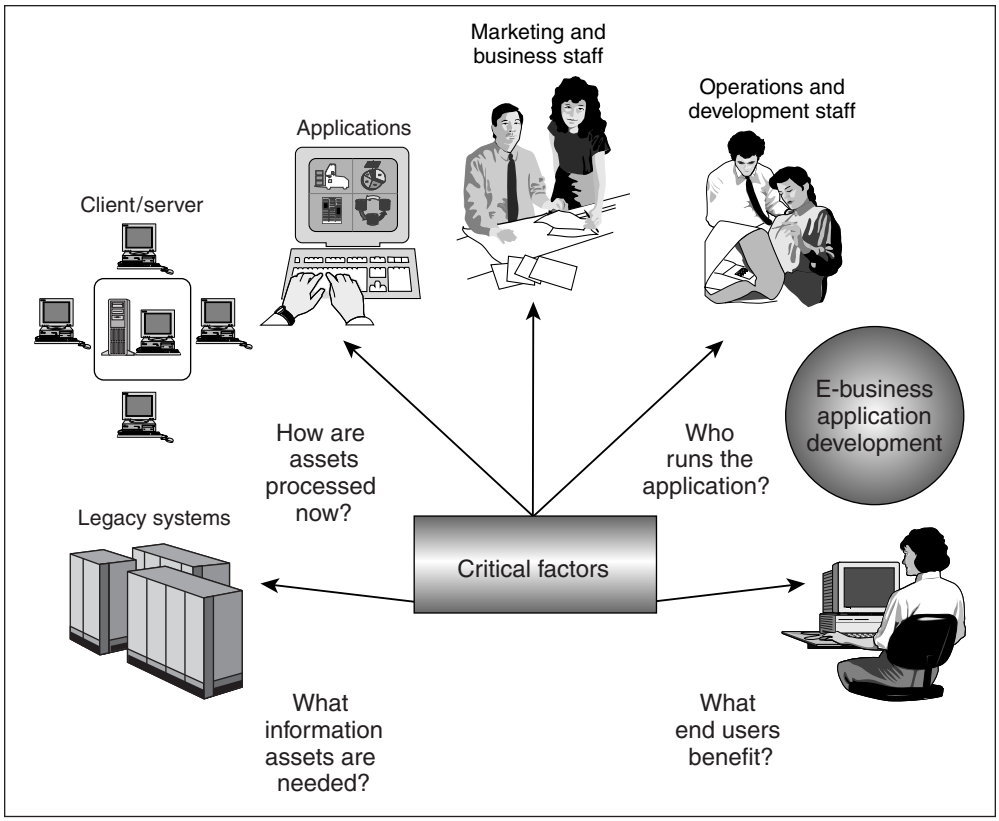

Figure 1–1 Critical factors for e-business development

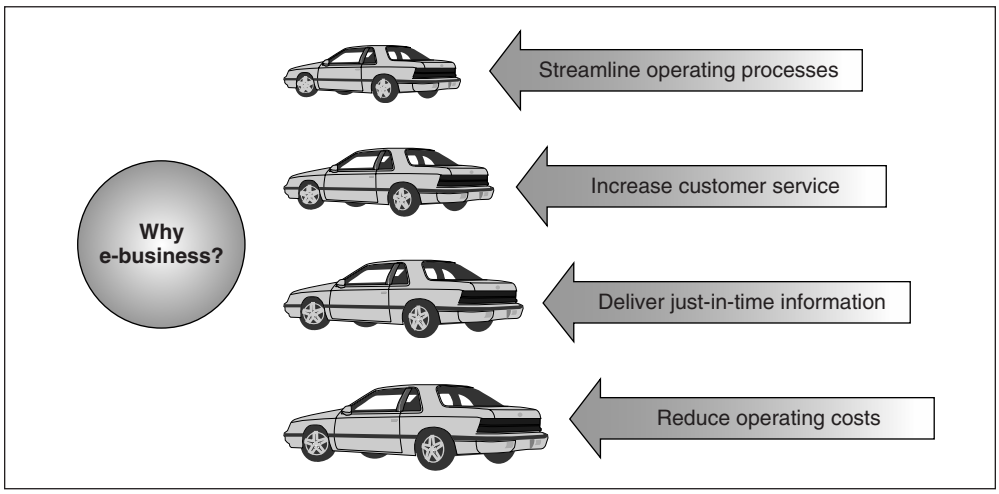

Figure 1–2 Important e-business drivers

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its simplest form, e-business involves incorporating the Internet or its technologies to support a *basic* business process. For example, your order entry system, connected directly to the inventory database, is typically accessed from the field by sales reps calling their *product availability* inquiries in to an order entry administrator. The sales reps call in through a static GUI program or by e-mail to an order entry clerk, who processes each inquiry by order of receipt. The process works but may bog down during peak periods of the day or when the staff is short-handed. Besides, the main function of the order entry staff is to process *actual* orders. Providing product availability information to the field is a related responsibility that is often superceded by higher priorities. Processing last-minute requests in preparation for a meeting is too often out of the question. To complicate matters, you also have independent dealers and affiliates requiring product availability status reports as well as inquiries on an ongoing basis.

After deciding that the product availability inquiry activity is suitable for an e-business application, the next step is identifying the information asset(s) the process generates. The mapping of information assets with the processes that support them is a critical requirement in e-business application development. In this example, the information asset created by the process is "product availability" (see Figure 1–3). After receiving the inquiries, the order entry staff queries the inventory database to check the status of products from key suppliers. When the availability of a particular product is ascertained, the information is conveyed back to the end user via e-mail or fax. The product availability information allows sales representatives to respond to clients effectively. Finally, you recognize that the order entry staff performs a clearinghouse function, or *a physical (manual) process,* which ensures that inquiries and responses are cleared out of the queue.

To be most effective, the e-business application would have to provide up-to-the-minute information to field personnel, consultants, and partners and also eliminate or streamline the product status and clearinghouse function, reducing sales support costs. Moreover, the resulting application would reduce communication costs, given that the Internet replaces traditional communications links, and end users' learning curve would be less, as the system would be accessed through the familiar environment provided by Web browsers.

This all sounds good. However, it's easier said than done. In order for the e-business application to provide the functionality of the previous system, the product inquiry and *physical* clearinghouse process is enhanced by a *digital process,* or computer application. The database—in this case, the inventory database—must also be available and interconnected to the virtual process, or application.

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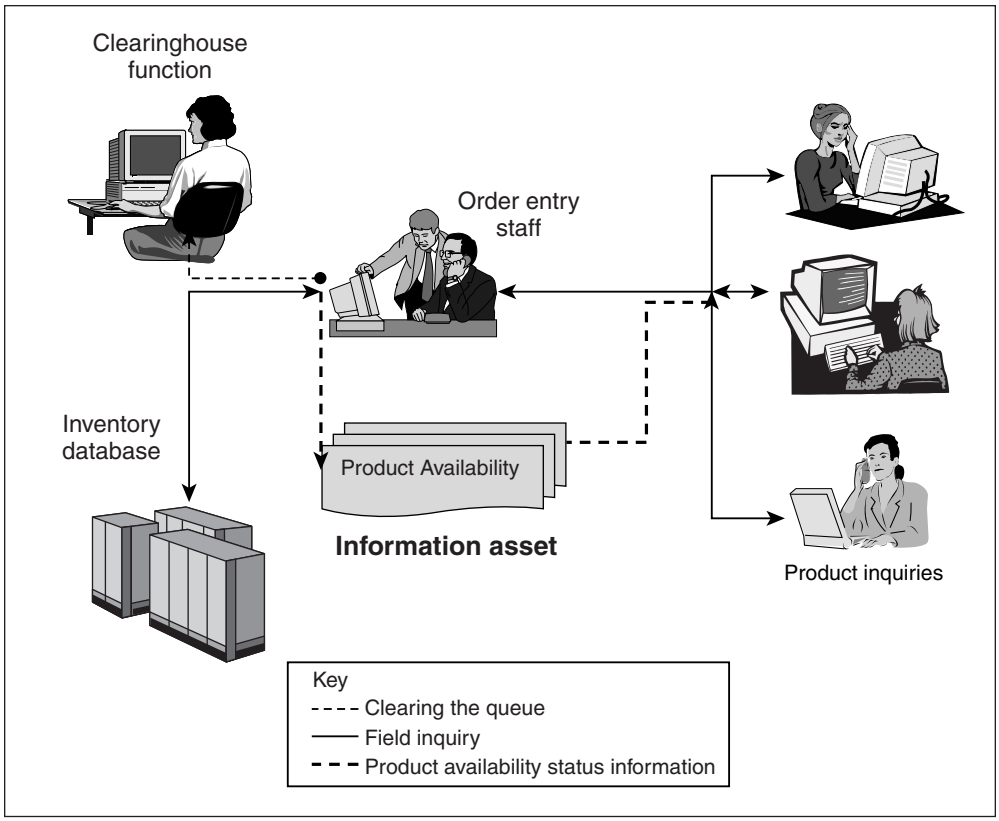

Figure 1–3 Product inquiry fulfillment process

Instead of *field* personnel interacting with a character-based, static GUI or other generic front end to generate the inquiry request, they would access a front end that is capable of running in their browser, a personal digital assistant (PDA), or wireless hand device. The front end—Web server—must be able to perform the function provided by the order entry staff. That is, it must be able to access the inventory database, gather the information required by the inquiry, format the response, and feed it back via the Internet to the appropriate place (field) in the user's browser, which is running the application on a laptop, home office computer, PDA, and so on. The application also does some housekeeping chores by clearing the inquiries from the front end and the remote database calls from the back end, or inventory database.

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Most likely, the front-end Web application, or what the users see and interact with in the browser, is developed with Internet-enabled technologies, such as Java or HTML application tools. The back end could be, for instance, a legacy UNIX database that has been a mission-critical application for some time. To accomplish the *interconnectivity* between the front-end browser application and the back-end UNIX database, yet another application system, typically referred to as *middleware,* must be used to provide the interconnections, or compatibility, between the dissimilar front- and back-end applications. Examples of middleware are systems developed with J2EE (Java 2 Platform Enterprise Edition). Developed by Sun Microsystems, J2EE is more popular in Web application development than CORBA (common object request broker architecture), introduced by the Object Management Group in 1991, or DCOM (distributed component object model), which is Microsoft's bet for an object standard. However, the other standards are growing in use for Web application development. With middleware in place, the e-business application provides the same functionality of the previous system. However, the virtual process replaces the traditional product inquiry and physical clearinghouse process and provides greater operating advantages and overall benefits to the enterprise (see Figure 1–4).

You can see that for even the simplistic example shown in Figure 1–4, crossing over from a traditional process to a virtual process to achieve e-business goals could pose a potentially complicated challenge, like crossing a chasm on a tightrope. Crossing this *digital* chasm to pursue e-business opportunities therefore requires a complete knowledge of the enterprise's information assets, or more appropriately, where the necessary information assets reside to support a given e-business application. This crossover also assumes the incorporation of a dynamic, browser-compatible front end and the identification or development of the static back end: the database. Perhaps the most critical aspect of the entire process is deploying the middleware that ties the whole e-business application together. This is the lifeblood of e-business.

The Sobering Reality

As e-business legitimizes the Internet as a mainstream business facility, many individuals have begun to see the Internet more as a basic utility, not a mere convenience. Livelihoods in every field of endeavor are increasingly going online. And when livelihoods are involved, a sense of security is usually an accompanying factor. As previously suggested, the World Wide Web consists of highly complicated yet fallible technology. In dealing with computer networks, a modicum

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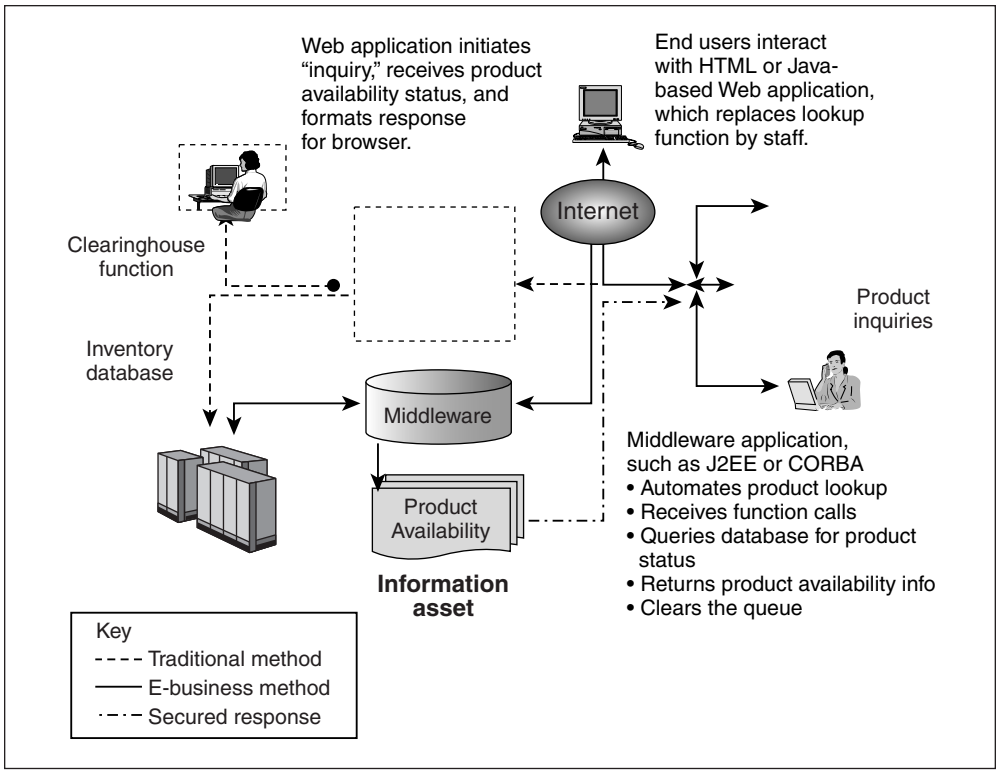

Figure 1–4 Crossing the digital chasm with middleware

of inconvenience is acceptable. Sites get overwhelmed and clogged with traffic, Web servers break down, HTTP and Java applications crash, and huge file transfers affect overall network performance. In general, such events occur without any interference from external hackers and crackers or internal saboteurs. Besides, no one is naïve enough to expect uninterrupted service just because essential applications are moved online. Those occasional hiccups in network service are not usually a threat to our sense of security.

However, as more and more businesses and entrepreneurs make that all-important leap-of-faith in search of increased revenues, operational efficiencies, cost savings, and/or strategic advantages, rest assured that hackers, crackers, and saboteurs will attain more powers of destruction. Fortunately, such powers are not omnipotent enough to stop the momentum of the Internet migration. But they are powerful enough to shake that sense of security we need to pursue our

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livelihoods. Internet denizens should condition themselves to expect visits from these human-driven menaces.

Real-World Examples

If you want to know what it's like to weather a horrendous storm, just ask E-Trade. E-Trade, the nation's second-largest online broker, pioneered the radical shift from traditional brokers to trading stock online. About 7 AM in early February 2000, E-Trade came under a massive denial-of-service attack. It was no coincidence that the attack began precisely when E-Trade's customers, online brokers, and day traders begin flooding the site with legitimate orders for stock purchases. Much to everyone's chagrin, the site was being flooded with bogus queries, which succeeded in choking the system and at the same time *denying* legitimate subscribers entry to the site. The relentless onslaught of bogus activity continued well after 10:00 AM, successfully locking out business activity during the stock market's busiest time of the day.

In the aftermath of the attack, about 400,000 traders, about 20 percent of E-Trade's client base, were either unable to make trades or lost money owing to the length of time required to complete them. As a stopgap, E-Trade routed some investors to live brokers. Consequently, E-Trade lost millions of dollars when it was forced to compensate traders for losses from trades taking longer than usual and to pay the fees from the live brokerage houses.

A few days before the attack on E-Trade, Yahoo and Amazon.com were also temporarily crippled by denial-of-service attacks. As the now infamous attacks were under way, the Internet economy was stunned, and a sense of helplessness permeated the virtual community.

The attacks bring into focus the shortcomings of the Internet. Although industry observers feel that the attacks will not stunt the exponential growth of the Internet, they highlight the vulnerabilities of the millions of computer networks that delicately link the new economy. Some observers try to equate those attacks with the equivalent of spraying graffiti on New York's subways. Others maintain that real ingenuity and solid citizenship will ultimately win the battle for the Internet's safety and integrity. Such ingenuity could lead to dispensing a host of innovative controls to patrol the freeways of the Internet. In the meantime, business will be conducted but not quite as usual. This era is marking the end of Internet innocence. If you are involved either in e-business or in planning for it, you should condition your expectations for hacker exploits, much like we are conditioned for junk mail, rush-hour traffic, or telemarketers. In the

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meantime, a gold rush is under way. Although every stake for e-business will not find gold, the *virtual forty-niners* will not be deterred in their mad rush for e-business.

E-Business: The Shaping and Dynamics of a New Economy

E-business is a revolution: a business existence based on new models and digital processes, fueled by hypergrowth and new ideals. It is also pursuit of new revenue streams, cost efficiencies, and strategic and competitive advantages spawned by virtual business channels. Cutting-edge Internet technologies and new vistas of emerging technologies enable e-business. E-business is a forging of a new economy of just-in-time business models, whereby physical processes are being supplanted by virtual operating dynamics. Yes, e-business is all this. But still, what *is* e-business? In other words, what is the intrinsic nature of e-business?

The E-Business Supply Chain

Typically, e-business is described and discussed with more emotion than other business areas, and rightfully so. After all, we are witnesses to an exciting revolution. To gain true insight and a conceptual understanding of e-business, it needs to be defined from both the B2C and the B2B perspectives. This section also introduces Internet, or digital, supply chains and reveals their underlying significance to both the B2C and B2B e-business channels.

The Business-to-Consumer Phenomenon

When consumers purchase goods and certain classes of services directly from the Internet, online retailers are servicing them. In other words, online retailers, or e-tailers, have initiated a consumer-oriented supply, or value, chain for the benefit of Internet consumers. This form of Internet-based activity is known as business-to-consumer (B2C) electronic commerce. In this discussion, supply chain is used interchangeably with value chain. However, supply chain, in the traditional sense, refers to the supply and distribution of raw materials, capital goods, and so on, that are *purchased* by a given enterprise to use in manufacturing or developing the products and services for customers or in regular business operations. In B2C distribution modes, supply, or value, chain refers to the system, or infrastructure, that delivers goods or services directly to consumers through Internet-based channels. But what exactly is B2C e-commerce? But more important, why has it grown into a multibillion dollar industry?

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To begin in the abstract, B2C e-business is a rich, complex supply chain that bears no *direct* analogy to the physical world. In fact, *no supply chain* in the physical world compares to B2C value chains such that an apples-to-apples comparison can be made. Thus, B2C e-channels are unique because they are providing supply chains that *streamline and enhance processes* of the physical world (see Figure 1–5). Internet-driven supply chains depend heavily on the coordination of information flows, automated financial flows, and integrated information processes rather than on the physical processes that traditionally move goods and services from producer to consumer.

Three classes of B2C value chains make possible the following e-business realities:

1. Delivery of the *universe,* or an unlimited number—potentially millions—of goods and services within established markets, by operating under a single brand identity or as a superefficient intermediary
2. Creation of *new market channels* by leveraging the Internet
3. Elimination of middlemen while streamlining traditional business processes

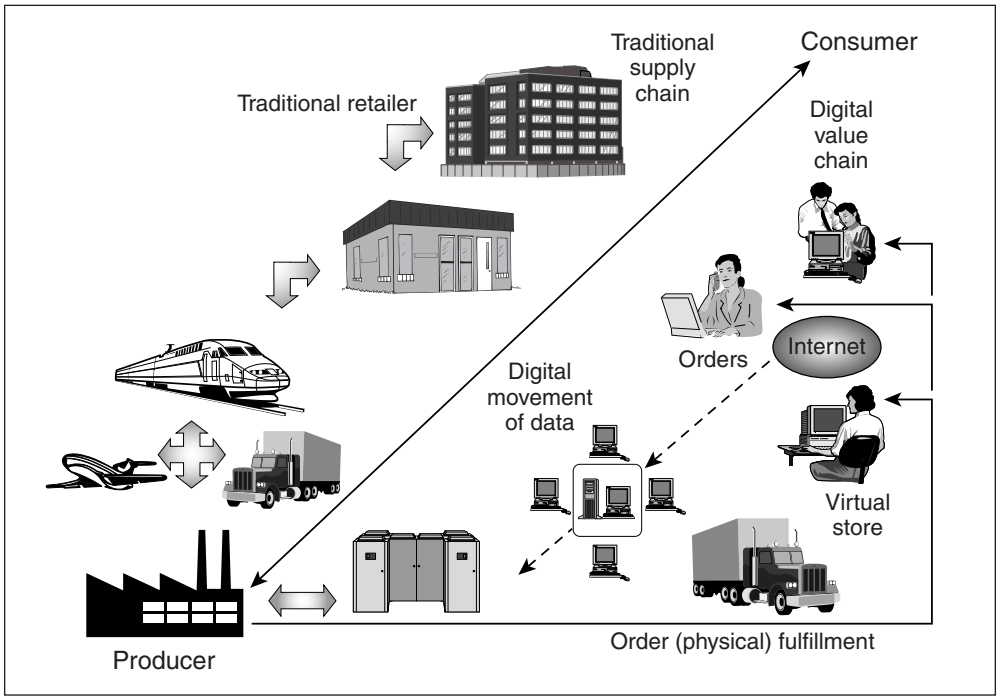

Figure 1–5 The B2C supply chain streamlines processes of the physical world

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Amazon.com and CDNow are excellent examples of the B2C class indicated in class 1. Amazon has succeeded by producing an efficient consumer product delivery system. The value in this e-business channel is the uniting of many back-street dealers under the banner of one popular brand name. CDNow is also attempting to implement a similar strategy. Furthermore, no one bookstore or music store in the physical world offers 10 million titles like Amazon.com does or 325,000 CDs like CDNow does. Traditional book or CD retailers in established markets could never offer this vast array of merchandise, because of shelf space and inventory constraints. For example, the typical superbookstore or music CD store stocks only 150,000 or 60,000 titles, respectively.

An example of B2C class 2 is eBay, which created a *new* market channel in establishing an online auction facility. Through this e-business channel, buyers and sellers—everyday consumers—can interact to sell personal items in a venue that did not exist previously.

Dell.com is an example of the third B2C e-business class. Dell.com is successful because it incorporates the principle of *disintermediation,* or the ability to eliminate intermediaries from the value chain. In other words, disintermediation involves disengaging middlemen, who usually command a share of the value chain. Research has shown that intermediaries add a large percentage to the final price of products. Percentages range from 8 percent for travel agents to more than 70 percent for a typical apparel retailer. Dell is a business case example of effective deployment of disintermediation because its direct consumer model delivers *custom-built* computer systems at reasonable prices by leveraging Internet channels. In the future, other online supply chains will successfully remove middlemen, resulting in even lower prices for other classes of goods and services.

Perhaps the common denominator of all three categories is the potential to streamline physical operating processes in the supply chain. This is another important reason that B2C growth through the Internet is so compelling. Physical retailers are capital intensive. When the shelves are fully stocked, adding new products may prove to be too challenging, possibly requiring either displacing more established products or engaging in a costly physical expansion. On the other hand, the incremental cost of adding new products for an online retailer is minimal, especially because the product manufacturer or distributor may carry the inventory. Also, online retailers do not have to incur the cost of operating a showroom floor.

Similarly, the processes of other consumer-oriented services, such as travel agencies, can be streamlined by automation and the overall service provided

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through the Internet. Such trends serve to pass on the cost efficiencies to consumers, who in turn pay lower prices. Expect to see more service-oriented interests, such as financial institutions, provide more services online in the future as they continue to identify physical business processes that can be enhanced by a move to the digital world of the Internet.

In summary, the Internet supply chains created to support B2C e-business initiatives have no direct analogy in the traditional, or physical, world of commerce. True, the two channels have similarities. The goods and services offered in physical bricks-and-mortar retailers become sexy multimedia presentations and *transaction data.* E-tailers and consumers connect via Web portals instead of driving to malls or to various business concerns. Inventory becomes online transaction data that flows from the consumer's *shopping cart* of the online store—Web site—to fulfillment houses or directly to the producers themselves.

To recap, B2C value chains create the following three types of e-business realities:

1. In established markets, creation of *digital supply chains* that *eliminate middlemen* and enable the availability of a unique service, such as Dell's direct delivery of custom-built PCs.
2. Creation of a *new market channel* that *did not exist* in the physical universe, such as eBay's creation of the online auction facility for the convenience of everyday consumers.
3. *Uniting* of back-end, used or rare-product dealers under the banner of a popular name brand. In effect, this creates a consortium of businesses under a *single branded identity,* or under a new, superefficient intermediary, that *did not exist* in the physical world.

If you can create a B2C value chain that eliminates middlemen, establishes a new market channel for a novel idea, or creates a superintermediary providing an unlimited number of products while streamlining physical processes in all cases with Internet applications, you just might become the next Dell, eBay, or Amazon: a *dot-com.*

The Business-to-Business Phenomenon

B2B is the poster child for e-business. As exciting and awesome as B2C and other e-business opportunities are, they pale next to B2B projections. (See the section The E-Business Sweepstakes earlier in this chapter.) Although prognostications vary across the board, all estimates are in the trillions of dollars. One forecast has

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B2B commerce growing from $150 billion in 1999 to $7.4 trillion by 2004! Presently, the median transaction for B2B sites is three to four times the size of the median transaction for B2C sites, or $800 versus $244. Important drivers of this projected growth include, but are not limited to, competitive advantage, reduction of costs, increased profits, and customer satisfaction. If you are able to build an effective B2B channel, the payoff could be significant, resulting in improved economies of scale and productivity, reduction in overhead, improved information flows and processing, and increased operating efficiencies, to name a few.

In light of projected growth, we should expect an exciting, evolutionary time in the development of dynamic B2B Internet channels, ultimately leading to robust extranets that consist of dynamic e-trading communities. At the heart of e-business transformations will be the Internet-enabled supply chain. In fact, you might say that these new digitally oriented supply chains are at the epicenter of e-business migration. Through the benefits of properly implemented B2B supply chains, enterprises can

- *Reduce costs of goods and services and potentially lower customer prices.* By connecting information systems directly with suppliers and distributors, organizations can realize more efficient processes, resulting in reduced unit costs of products or services and, perhaps, lower prices to customers while effectively achieving economies of scale.
- *Reduce overhead.* B2B channels can eliminate extraneous or redundant business functions and related infrastructures, resulting in the reduction of overhead costs.
- *Increase productivity.* By eliminating operational waste and the automation of inefficient business practices, organizations can realize productivity gains.
- *Enhance product and service offerings.* With economies of scale, reduction of overhead, operating efficiencies, and lower operating costs, such gains may be passed on to the customer through lower prices or as enhanced or additional features of products or services.
- *Customer satisfaction.* A strategic benefit of the successful implementation of dynamic B2B business models is improved customer perception of the transaction.

This metamorphosis will not occur unless companies undergo radical changes. Enterprises will begin with critical self-examination and comprehensive process analysis to determine what internal operating functions, underlying infrastructures, and critical practices are necessary to transform into a B2B channel

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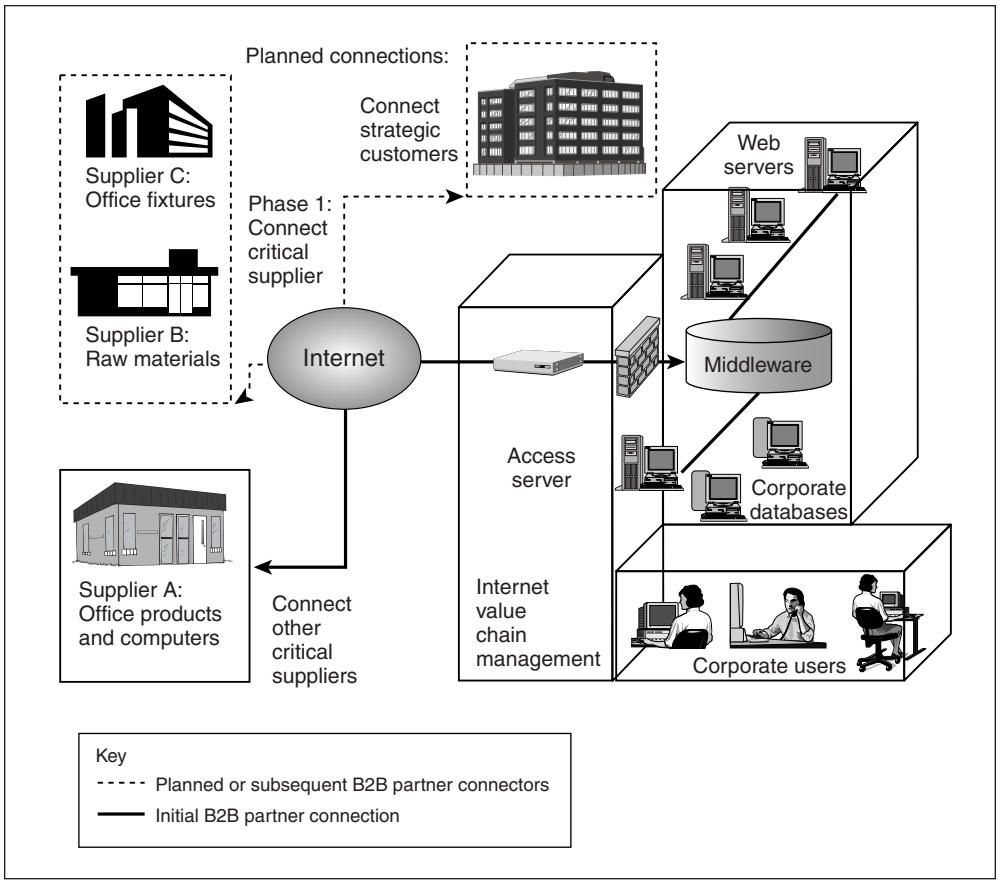

Figure 1–6 Management process of B2B value chain

that is capable of leveraging the Internet. This in turn will lead to the reengineering of processes, elimination of operational inefficiencies, and, ultimately, increased productivity. If companies are successful, they will reinvigorate their value chains, incorporate technology-driven processes that become the foundation for B2B, and increase transactions with customers (see Figure 1–6).

Related E-Business Trends

Pursuing business-to-consumer markets, especially if the goal is to become a coveted *category killer* in one or more product areas, would be too much of an uphill battle for many enterprises. Category killers are the dominant player or players in an online product category, such as Amazon.com and Barnes and

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Noble for online book sales. The business-to-business arena may offer greater opportunity for capitalizing on e-business applications. However, the potential IT investments required, along with the general complexity of EAI to achieve seamless B2B information systems could prove beyond the means of many enterprises. But make no mistake about it: E-business is here to stay. The reason is that traditional business processes are being reinvented into new digital processes within the e-business value chain and enabled by Internet technologies. A properly constructed B2B supply chain can reduce costs, increase productivity, enhance product and service offerings, and increase customer satisfaction.

Summary

B2C and B2B business models provide progressive enterprises with the means to reinvent their organizations, streamline business processes, automate traditional business processes, and quickly adapt to new situations, opportunities, and market demands as they unfold. In the rush to embrace e-business, organizations understand that new opportunities must be pursued at the speed of information, which in turn is being enabled by the rich but inherently insecure technologies of the Internet. To be successful, therefore, you must show that Internet supply chains are dependable. If your public Web site is designed to support the overall B2B effort also, acceptable security measures should be implemented there as well.

Another critical success factor is that B2B channels must be more available than traditional competitors, which operate in the physical world. But to meet or to exceed e-business objectives, your suppliers, distributors, and employees must perceive that the B2B online supply chain is secure enough to support the required level of transactions on an ongoing basis. These are the keys to success in the new business reality of B2B value chains.

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