

knowing who to gouge - in this case, the business customer who also has perfected the science of yield management, concocting complicated pricing schemes that defy comparison. The price for an airline seat can change several times and a passenger is virtually certain that the person sitting in the next seat has paid a different fare.

Now, airlines are tapping into the Net - but mainly as a way to sell unfilled seats. They routinely send out e-mail alerts of last minute fare specials. And several airlines have signed up with Priceline, which lets customers specify when and where they want to travel, and name their price. Priceline then forwards the bids to participating airlines, which can choose to accept the request or not. The company makes its money on the spread between the bid and the lower airline price. It empowers the buyer and also the seller. They can plug in demand to empty flights.

Such e-markets produce a price that fairly reflects demand. Some companies may be surprised by the results. Look at AucNet, an online auction for used cars. Dealers and wholesalers flock to the AucNet's website to buy and sell some 6,000 cars a month. Surprisingly, sellers fetch more for their used cars than they might on a physical lot. That is partly because of the larger audience they have attracted on the Net.

E-BUSINESS

The e-business idea means more than simply creating a marketing "presence" on the Web. It represents a transformation of the business process itself, enabled by the Internet's unique combination of features:

- instant access to information,
- universal and global reach, and
- personalized delivery of information and services.

In e-business, critical business systems are connected directly to an enlarged community of users, including customers, trading partners, and employees. That means these users can:

- buy goods and services,

- update their own accounts,
- get up-to-the-second information, and
- resolve disputes—all electronically, immediately, with 7x24 availability.

That also means the providers of goods and services using the Internet are not bound by the constraints and delays of traditional businesses, including:

- *brick-and-mortar* facilities,
- paper-based communications with customers and suppliers, and armies of middlemen translating the external business environment into the data formats understood by internal systems.

The result is that e-business allows companies to:

- develop new products and services faster,
- increase customer loyalty through superior service, and
- integrate the supply chain more efficiently, and market more effectively to the individualized needs of their customer base.

The world of e-business is a radical departure from the models that have governed commerce for decades—and the IT systems that have served them. Profit margin is starting to take a back seat to revenue growth and market share, as whole industries consolidate through mergers and acquisitions.

The digital revolution, driven by the sudden emergence of inexpensive, standards-based communications linking all businesses and customers anywhere in the world, is transforming every industry, and no company is safe from the winds of change. For example, information about customer transactions, captured automatically on the Web, becomes almost as important as the transactions themselves. They enable companies to understand each customer's needs and preferences, and then market goods and services to each customer in an individualized way, all automatically. In e-business, marketing and service delivery blend transparently.

The need for elegant brick-and-mortar facilities or finely crafted distribution channels, critical under the old rules of commercial engagement, disap-

pears with e-business. The Internet is enabling startup companies with almost no fixed assets to deliver goods and services faster.

For years the return on technology investment in business has been increased profits from productivity gains, largely based on cost reduction of internal processes. The focus has been on making the wheels turn more freely *inside the company*. E-business brings cost reduction, too, but that's not its key benefit. The new boardroom mantra – raise the top line, increase market share, attract and retain customers – is making e-business a strategic imperative.

E-business is *externally focused* on customers and trading partners, bringing them inside the company's business process. It is about entirely new ways of finding new customers, providing free information about goods and services, and making it as easy and convenient as possible to conduct business over the Internet. And it is also about using the knowledge of the customer acquired in the process to maximize the lifetime value of that customer through superior service and individualized attention.

One-to-one marketing is a radical innovation made possible by e-business. By capturing and analyzing the site navigation behavior, self-identified interests, and actual past purchases of its customers using their website, companies can pro-actively tailor the presentation of additional goods and services to each customer.

With e-business, companies can reach out to large numbers of potential customers through portals, information-oriented sites like Yahoo that attract millions of visitors daily, and act as hubs for connecting to a wide variety of other sites. In fact, the sheer volume of information available invites users to personalize the portal, configuring their view to show only information of particular interest. These configurations enable the portal to target advertising to user for maximum impact. Portals also enable affiliate marketing, allowing companies to offer goods and services transparently behind other companies' websites, meaning new channels to the customer.

An emerging concept from the Knowledge Management discipline is the knowledge or corporate Intranet portal, which, like the Internet portal, attempts to aggregate content relevant to the user in a single point of access. Corporate portals act as a "start page" for the knowledge worker, focusing on business data acquired from a company's Intranet, ERP applications, and relevant websites from external sources. They are personalized to the users' needs and help bring organization to the "infoglut."

Gradually, several business processes enter the Web mode of operations. Among them one can recognize the following Web-driven solutions:

- **e-Commerce**—electronic environment for transactions handling (described in the previous section)
- **Enterprise Information Portals**— Web-oriented knowledge management (described in Chapter 8)
- **e-Marketing**—besides Customer Relation Management applications, there are other solutions such as e-mail “push” marketing and e-mail discussion lists, which provide free “listservs” that convey adds for targeted audiences. One of such providers is San Francisco-based *www.eGroup.com*, or *www.jaboom.com* website that attracts people by providing free music and convey to users’ adds, and with the \$9,000 budget bought 300,000 impressions.
- **e-Procurement**—is a sort of e-commerce among producers and subcontractors through the Extranet.
- **e-Human Resources**— provides a facility for self-service operations in creating and updating an employee’s personal records and typical routines, such as submitting travel expenses, receiving employment statements, and so forth. This function can be outsourced to companies like Hewitt Assoc.
- **e-Billing Presentment and Paying (eBPP)**—holds particular promise for industries such as telecommunications, cable, utilities, financial services, and publishing, for which billing is a big chunk of their business and huge expense. The typical cost of producing and sending a statement by snail mail is between 90 cents and \$1.25, whereas an electronic bill costs only 25 to 30 cents to generate and deliver. However, more savings will be in making payments, where the average processing cost drops from \$1.50 for a snail mail, paper-based payment to a mere 10 cents to pay in e-bill. Third party consolidators such as Yahoo! or CheckFree provide inter-platform computability between the biller and the payee. The customer deals with the consolidator and never goes to the biller.
- **e-Signature** — is a digitized image of a signature that is linked to a mathematical algorithm that verifies the authenticity of an e-document. If the document is altered after signing, the signature is broken and invalid. This sophisticated capability likely will be pushed to customers by the

companies they do business with. The mass-market technology is on the way. In 2000 Silanis Technology Inc. spun off its software (www.onSign.com) to consumers and small businesses. The 2000 e-Sign Act opens the door for more companies to adapt e-Signature.

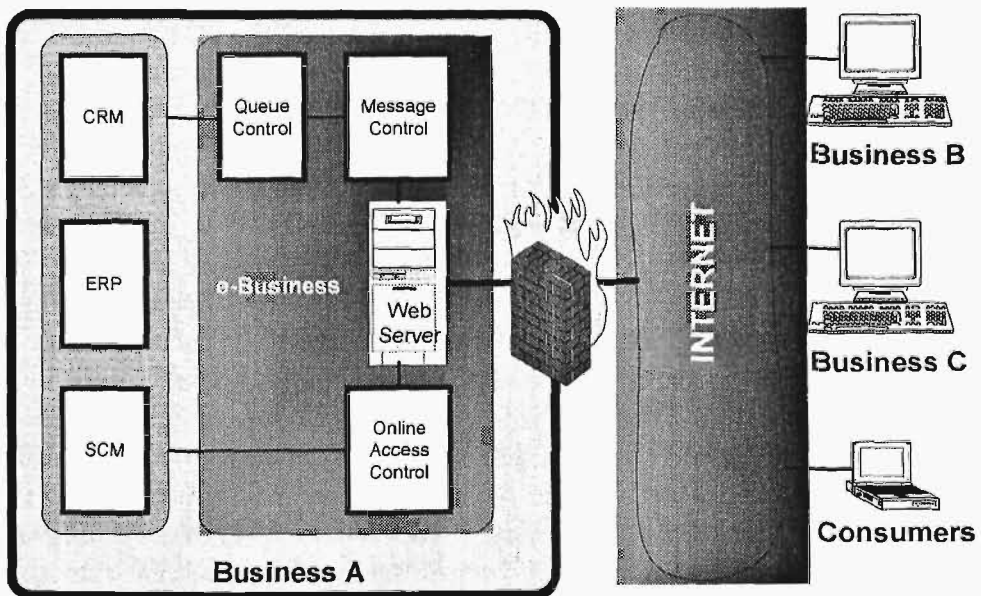
- **e-Content**— facilitates the collection of data and information and their transformation in knowledge (patterns and rules) that support decision-making in complex circumstances.
- **e-Document**— provides a scalable digital repository for every type of document (application reports, databases, content bases, word processing, fax, images, e-mail, video files, voice files) which is retrievable through Web browsers (IBM Content Manager OnDemand and LotusDomino.Doc are example of e-document technology and strategy). Hewitt Assoc. apply e-document system for 10,000 employees in 72 locations in 32 countries and for its Fortune 500 customers (75% of the list), who can use the Content Manager of the enterprise common digital repository to load, search and reproduce a given document either needed in intra or external operations.
- **e-Publishing**— to save costs on paper-based publishing and accelerate the content delivery to readers. By an efficient process, it may improve relationships among a company's workers and management, particularly if a feedback mechanism is in place.
- **e-Service**— transforms traditional banking into Web-driven transactions and as a by-product of it, creates inputs to warehouses for further data mining.
- **e-Communities**— are virtual gatherings of customers and potential ones who are supported by added values services.
- **e-Business Intelligence**— is a system that scales down sheer volume of collected data/information (Yahoo! collects the daily equivalent of 800,000 books; Engage Co. organized 30 million profiles for adds, [*Business Week*, July 26, 1999]) and aggregates information to define trends and determine important "personalized" details (Profile, Site Path, Preference) and instantly refresh source data. One of such systems offers www.INFORMATICA.com.

- **e-Learning** – is about using the Internet to revolutionize the way people learn. The reusable education content is delivered by e-Document, real-time collaboration (e.g., desktop videoconferencing, telephoning or text), virtual labs, broadcast video, or simulation. In a sort of self-service mode, an employee identifies knowledge gaps, takes workforce benchmarks, and adapts an individual plan. The employee creates an assessment process, document learning history, establishes entitlement processes, and develops a custom learning agenda. By taking advantage of these tools employers can maximize their workforce to obtain a competitive edge. The American Bankers Association (ABA) offers the Internet-based 100 training courses for banks' workers.
- Other

One can predict that in the future, the majority of business functions and processes will be automated, informed and put on or integrated through the Web.

E-business, the corporate offspring of the Internet, continues to captivate the attention of business leaders. Fully 97% of 250 IT executives at the *Information Week 500* surveyed in 2000 say e-Business is the No. 1 business

Figure 6-5: The Architecture of e-Business Systems



priority of their IT departments which will implement it in the next year. E-commerce applications, intranet and enterprise portals, and B2B electronic networks top the list of key strategic priorities.

Information Week 500 companies, on average, derive 22% of their revenue from e-Business transactions, and 45% of those companies report e-business operations. Up-and-coming *brick 'n click* companies continue to invest heavily in business-to-business operations.

The architecture of e-Business Systems is shown in Figure 6-5.

“DOT-COM” COMPANIES

A dot-com company is an organization that offers its services or products exclusively on the Internet. Although a company that makes only a Web-based software (e.g., Microsoft) might be in the dot-com industry, it is generally not considered a dot-com company. Amazon.com, Yahoo! and eBay are typical dot-companies. “Dot-com” refers to the period (dot) followed by the abbreviation of the commercial domain (.com) at the end of the Internet e-mail or Web address. Since the .dot domain is so widely used, the Internet has become known as the “dot-com” world, and dot-com companies are those that offer their wares on the Web. Since .com addresses are the most popular, Web browsers default to adding the .com to the end of the URL if no other domain, such as .org or .edu is typed.

Dot-com companies are electronic enterprises that differ from old industrial ones, called “*brick 'n mortar*” companies. However, the latter transforms into e-firms and therefore are called “*brick 'n click*” companies. On the other hand, in 2000, when the dot-com companies went through the market correction, they understood that their further success depends on how well they will develop traditional solutions; for example, warehouses. Hence, such transformed companies are being called “*click 'n mortar*” companies.

The Internet is often called the great equalizer of capitalism, a tool that permits almost everyone with an entrepreneurial spirit to start a new business. In 1995-1999 the Internet start-ups created several thousand new companies which within a year have been employing on average 100 people, and that is a very different environment than the entrepreneurial start-ups of five to 10 years ago. The reason that the New Economy start-ups grow more quickly is because the Internet gives them access to broader customer markets than other firms that are limited by geography. In turn, the capacity to increase sales at higher rates helps high-tech firms draw venture-capital from all over, allowing

further expansion. After one to two years of their existence, they offer Initial Public Offerings (IPO) and the founders become overnight millionaires or even billionaires.

Dot-com retailers, brandishing fully loaded bags of cash and bravado, staked claim to the e-commerce turf by the end of the 1990's by muscling in on timid *brick 'n mortar* companies, enticing consumers with cheap prices and perks such as free shipping. And while the dot-coms wounded many old-guard companies, what was clear following the 2000 spring's market decline was that the *brick 'n mortar* companies have fought back with highly successful *mortar 'n click* strategies.

Times since 2000 are suddenly tough for dot-coms. A volatile, punishing stock market has cast an unflattering light on some rapidly deflating paper fortunes. Consumer and retail websites are being eulogized and dissected while their little hearts are still pounding and law firms have begun to staff up to handle bankruptcies.

Some experts believe that the vast majority – perhaps 95% to 98% of all dot-com companies – failed in 2000-2002 (Gartner Group, Inc.). According to the same source, the true blending of traditional and Internet business models – and not the pure dot-com model – will be the winning formula. These dot-com companies will get consolidated by the Amazons and Wal-Marts of the world.

So far the cost of building and launching increasingly sophisticated Web-based e-commerce sites requires a funding in a range of \$1 million. After the stocks fall in 2000 it is now more difficult to raise funds for new Internet start-ups.

Let's take a look at the most successful dot-com companies such as Yahoo!, Amazon, eBay, and America Online.

Yahoo!.com. It was built by Tim Koogle as a Web portal which in 2000 had 145 registered users and 48.3 million visitors every month. The company has a strategy of partnering with a lot of companies instead of buying them. Rather than trying to own everything from websites to cable-TV systems – not to mention TV studios and print magazines – Yahoo! is a pure Web media play. It offers the masses a friendly gateway to the Webworld. Rather than selling merchandise itself, though, the company partners with retailers. It charges them fees for transactions generated on its websites. The result: its gross margin of 82.7% is more than four times Amazon.com's. It doesn't have to pay for warehouses and labor. As a result of this strategy, Yahoo! could become an e-commerce juggernaut. It added Amazon-style cyberwallets and product reviews. It also teamed with Kmart inc. on free ISP (Internet Service Provider)

bluelight.com, which has more 1 million users who automatically become Yahoo users.

Amazon.com Inc. It is a superstore which is considered one of the world's great consumer companies. It keeps in inventory about 3 million books and in 1999 achieved \$1.6 billion in sales. In 2002 it should reach a level of \$6 million and show for the first time profit. This superstore has 25 million customers who are actively spending about \$130 per person per year (2000). The e-retailer was developed by Jeff Bezos who was the Time Man of the 1998 year, who has shown others how to organize e-commerce. The company created a huge presence in the Internet Ecosystem and beyond. People who know nothing about e-commerce know about Amazon. It is essentially hoping to follow in the footsteps of AOL and Yahoo! Amazon's theory is that they can scale up first and be profitable later.

eBay.com. It was founded by Meg Whitman, a pioneer of online auctions. The company facilitates trade of flea market items through big-ticket items such as automobiles and real estate, in total about 3 million things. In 2000 the public attention was triggered when somebody advertised for sale human organs. It has local sites in 53 U.S. cities and five countries. In 2000 the company had revenues of about \$500 million and about \$30 million of a net income.

America Online was founded in the early 1990's by Steve Case, who brought the Internet to 26 million registered and paying fee consumers and 60 million visitors every month in 2000. In the same year, the founder offered the merger with Time Warner Inc. at the \$183 billion level. It will be a combination of a quality content and channel provider who can monopolize the market not only in the U.S. but in Europe too. It also will be the electronic solution for how to connect the world in reality.

The key indicators of e-commerce are shown in Tables 6-2, 6-3, 6-4, 6-5.

Table 6-2: The Cost of Acquiring a Customer in 2000

Cost Category	Net Up-starts	Cataloguers On-line	Brick 'n Mortar Store Online
Cost per new customer	\$82	\$11	\$31
Marketing as percentage of revenue	119%	6%	36%

Source: Boston Consulting Group Study of 221 Online Retailers

Table 6-2 shows the reason why the majority of new up-starts (so-called dot.coms) went out of business in 2000-2001—because they spent too much on marketing—119% of revenues. Their strategy of neglecting revenues and emphasizing the broad reach of customers did not work. In capitalism, profit is still the most important factor of business.

Table 6-3: Frequency of Using Online Service in 2000

	Net Up-starts	Cataloguers Online	Brick 'n Mortar Store Online
Percentage of visits leading to orders	1.7%	2.1%	1.4%
Percentage of individuals who ordered	3.5%	4.2%	1.8%
Repeat buyers	27%	20%	34%
Abandoned shopping cars	52%	66%	76%

Source: Boston Consulting Group Study of 221 Online Retailers

Table 6-3 shows that every second consumer abandons an online store, perhaps due to a search for a better one, which is a relatively easy operation in the Internet, where through just one “click” one can move from one to another store.

Table 6-4: Customer Satisfaction in 2000

CUSTOMERS SATISFACTION WITH	
Customer service	41%
Easy returns	51%
Better product information	57%
Product selection ability	66%
Price	70%
Ease of use	74%

Source: Boston Consulting Group Study of 221 Online Retailers

Table 6-4 confirms that it is easy to use online shopping which provides better product information and selection.

Table 6-5: *Why Customers Buy in 2000*

WHY CUSTOMERS BUY?	
Recognize and trust merchant	51%
Purchased from merchant offline	39%
Purchased from merchant online	37%
Can find bargains	36%
Recommendation of others	23%
Merchant offers incentives	17%

Source: Boston Consulting Group Study of 221 Online Retailers

Table 6-5 explains why customers buy online, mostly from recognized and trusted merchants, for example Amazon.com.

B2C e-commerce depends on two types of mainstream consumers:

- Low-income technology optimists – students (16-to-22 year-olds) who are not afraid of technology shop online six times the rate of the overall population. They have \$1 trillion (in 2000), (17%) of personal disposable income of \$6 trillion. They are interested in what is new, what is cool, are very communicative, and they download music.
- High-income technology pessimists – earliest adopters, clients of Schwab looking for easy shopping and good choices at the bargain prices, they shop online at work and have about 12% of personal disposable income or \$2 trillion. They like the style of Banana Republic and J. Crew products.

According to some experts, “being a dot-com in and of itself is not a strategic advantage.” There is an advantage in being agile, in being new, in being funded, and having a single purpose to your organization. A lot of traditional companies like Toys “R” US and Wal-Mart are creating e-commerce and are being transformed in *brick ‘n click* companies. And vice versa; more and more *click ‘n click* companies are being transformed in *click ‘n brick* companies.

RETHINKING THE INTERNET

The once-limitless promise of the Internet appears to be fading in at the beginning of the 21st century. The dot-coms that were supposed to topple

industry giants have vanished² in 2000-2001. No. 1 e-tailer Amazon.com cannot extract a profit from its \$2.8 billion in sales. Without advanced technology such as broadband, the Net will take a longer time to fulfill its promises.

Where the Internet may be revolutionary³:

- Financial services - most financial services can potentially be handled electronically. But so far, banks cannot even figure out a good way of letting people pay bills online.
- Entertainment – much of entertainment can easily be digitized. But no one knows how to make money yet, and technology is lagging.
- Health care – the benefits of shifting health care transactions to the Web could be enormous. But so far are the institutional barriers.
- Education – e-learning could cut the cost of education, but only at the price of making education more impersonal.
- Government – delivering information to citizens has enormous appeal, but requires massive investments.

Where the Internet's impact may be incremental:

- Retailing – the glitzy websites got all the attention. But dot-com success turned more on who had the best logistics (distribution centers).
- Manufacturing – Web-enable supply chains and intranets are important, but ultimately a manufacturer lives or dies on the quality of its goods.
- Travel – online travel sites are popular, but the ultimate constraint on travel is the physical capacity of the air and road systems.
- Power – online energy exchanges get the publicity, but power generation and transmission capabilities will have bigger economic impact.

With the future of Yahoo! and Amazon.com growing slower, the following business models of B2C can be considered⁴:

- Niches are nice – e-tailers that focus on a niche will fare better. Profitable pet suppliers Waggin' Tails specializes in high-margin products, unlike the defunct Pets.com, which tried to do it all.
- Information brokers – the No.1 thing Netizens do online is look for information. Those that make it pay will win. Job-listing site Monster.com, which charges employers to post positions, makes money.
- The fence-straddlers – business in both the physical and virtual worlds reign. Merck-Medco, the nation's leading provider of prescription drug care, racking up \$460 million in online sales in 2000, has clobbered Net up-starts drugstore.com and PlanetRx.
- A la carte models – business models that boast multiple ways of making money have good odds. Real estate listing service Homestore.com, which sells technology and adds, was profitable in 2001 on revenues of \$440 million.

What we will pay for⁵:

- Internet access – a few free, plain vanilla dial-up services may persist, but nearly all will charge for a connection and technical support, especially for high-speed broadband access.
- Analysis – highly valued analyses of information, such as stock market prognostications or a city-by-city list of the best doctors, will come with a fee.
- Entertainment – just as we pay for all-movie and music-video cable TV, we will pay for video-on demand and music on the Web, especially now that the courts have outlawed Napster's free file sharing services.
- Specialized services – how about an online personal shopper? Or an advance peek at the Armani line for fall? An upscale e-tailer may offer paying club members such online extras.

What will remain free⁶:

- Commodity data—stuff that is widely available everywhere, such as stock quotes, weather, and news, will be Internet giveaways.
- Shopping information—the Web will remain a great place to comparison-shop and gather information on everything from car models to real estate.
- Search engines—they may cost a bundle to build, but the incremental cost of additional searches is minuscule, so they will stay free and rely on advertising and licensing to companies.
- Purchases – surcharges would make e-shopping lose its competitive advantage over catalog retailers and in-store purchasing.

The e-biz has future. If one looks at how the Net is changing the nature of markets, it is not that it cannot do it, but dot-coms are struggling to find the business models that work. No one has an answer to how to make money. That means it is still a time for experimentation.

FUTURE TRENDS

The early fascination with the Internet potential will slowly transform into more mature and financially sound applications. More emphasis will be put on the issues of security and reliability of Internet operations. The expansion of the Internet applications may be sketched in the main areas as follows:

- The number of consumers using the Internet will grow accordingly to the growth of the number of installed home computers. In the most advanced countries over 60% of households use home computers and only about 20% subscribe to Internet services. In less developed countries the use of home computers is two to 100 times smaller than in the developed countries. This digital divide leads to 1 billion citizens with a computer password and 5 billion without one. It may trigger unpredictable social unrest and political conflict, far beyond the IT professionals' problem solving capability. The most advanced users of the Internet may find that it is a very useful tool for obtaining simple data and information; however, it is not an omnipotent tool for obtaining the most relevant information for free.

- The corporate world will push for the development of e-enterprises that will lead to more innovations and problems which are very difficult to predict today. The new electronic business landscape is very interesting for its creators but less fascinating for its potential victims. It may lead to a fully automated-informed economy that will have electronic robots, and fewer traditional consumers and taxpayers, who will be unable to support this Digital Economy.

It is a question whether humankind will survive peacefully knowledge that has been created in the 21st century.

CONCLUSION

The Internet Economy makes the Traditional Economy more dynamic; however, the failure of dot.com businesses indicates that the “*mortar and click*” or “*click and mortar*” modes of business are so far the best solutions. This only confirms that the Information Wave does not replace the Agricultural and Industrial Waves. The Information Wave just optimizes other Waves’ development and operation.

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Sources for survey data come from publications on the Internet and they are mentioned throughout the chapter’s text.

ENDNOTES

- ¹ Source: Center for Research in Electronic Commerce, Graduate School of Business, University of Texas at Austin, © 2001
- ² This issue (*from dot.com towards dot.con*) is discussed in Chapter 1.
- ³ “Rethinking the Internet,” *Business Week*, March 26, 2001
- ⁴ “Rethinking the Internet,” *Business Week*, March 26, 2001
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