

Chapter

1

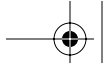
Drivers of the E-World

► Introduction

If you are reading this book, chances are that you are well aware of the influence the Internet has had on the world so far. That impact, however, is very different if we look at the Internet from either a personal point of view or from a business perspective. The Internet has proven infinitely bountiful as a tool for personal gratification but has been much more elusive in meeting the black and white goals of a business initiative. There are many other books and documents that go into why this is so. The purpose of this book, more or less, is to present at least, our point of view as to what to do about this business perspective problem.

The “cyberworld” is much more complex than the old-fashioned “brick-and-mortar.” The simple mantra of “Location! Location! Location!” has a whole new meaning when it comes cyberspace. But if the Internet is to be used for business purposes, how do apply the old rule to the new media? We can follow Michael E. Porter’s advice:

If average profitability is under pressure in many industries influenced by the Internet, it becomes important for individual



companies to set themselves apart from the pack—to be more profitable than the average performer.¹

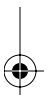
This is good advice, but it is easier said than done. We do not need to go into how much has already been said about the business potential of the Internet—too much has probably been said already. Our job is to define methodologies to tap into and exploit that potential to its fullest. A major mistake that has been made by the business community is seeing the Internet as a “cost-cutting” strategy to provide the same goods and services an organization already supplies. In other words, the business mantra of the past has been, “Yes, we sell widgets, but now we can sell widgets online at a fraction of the cost of maintaining a brick-and-mortar operation.” This approach has led many organizations to concentrate solely on “operational effectiveness” as a means of adding value to their business.

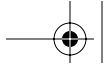
Simply put, if we make widgets at the same cost, sell them at the same price, but reduce the cost of selling them, we increase our profit! In isolation, this seems like a good idea, but we must remember economies work under market conditions, usually with some level of competition. Real economic value relies on maintaining a competitive advantage. If everybody else who sells widgets decides to sell widgets online for the same exact reason, where is the competitive advantage?

This is why the Four-Dimensional (4D) Framework goes further than just creating a Web site and calling it an “e-business.” The Internet is only an enabler for a more well-planned approach to gaining a more powerful and strategic position within a competitive market, regardless of what that market might be. To do so, we need to focus on just what that strategic position should be. There is no one-stop solution here since every organization and every business is different, with its own sets of goals, motives, and strategies. But with a fundamental understanding of how one’s own business works, using our framework should illuminate the most likely paths to identifying and implementing sound Internet strategies for any form of business.

We begin by stepping away from technology for the moment and concentrating on some basic principles. This way, we can clarify and understand our strategic goals. Let’s isolate these business principles and use them to define an entirely different set of business rules that

1. Porter, Michael E., *Competitive Advantage: Creating and Sustaining Superior Performance* (New York: Free Press, 1998).





provide for a more practical and successful framework for using “e-technology” to establish “e-businesses.” We base these principles on what we call fundamental *drivers*:

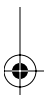
- Business drivers
- People drivers
- Process drivers
- Technology drivers

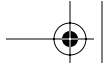
A “driver” can be thought of as the natural cause and effect of any natural transaction. Business, after all, is the exchange of goods between two or more parties, hopefully for the benefit of both. A transaction is an isolated exchange of a good, a service performed, or a payment made. A driver is the motivation and result combined for any given transaction.

Let’s look at a very simple example. Say a group of prehistoric cavepeople are hungry. If they could kill a woolly mammoth, they could all eat the meat, wear the fur, use the bones for tools, and the entire group would be better off. Since no single caveperson can kill a woolly mammoth on his or her own, they have to rely on each other, to benefit both as a group and as individuals. It serves their best interests to work together. This is a simple *business driver*.

Now that it has been decided that our cavepeople will work together, we need some structure to make sure they can work together effectively. We need a leader, of course, someone to make decisions for the group under stress or at other times of need. And there is likely to be some level of specialization. Some cavepeople may be good at running, so they should be the ones to distract the mammoth while those who are good with spears sneak up on it. Others may be good at skinning and cleaning the carcass or lighting the fires to cook it. Mind you, each member of the group may be able to do all of these things, but invariably, some will be better at some things than at others. How people work separately and how they work together, their skills and knowledge, define the *people drivers*.

Jobs, whether performed separately or in a group, are generally performed in a specific way. Sometimes, jobs can be done simultaneously, while others cannot be done until others are complete. For example, fires can be lit to cook a mammoth before it is actually killed, but of course, it can’t be cooked until the mammoth is killed. Therefore, the



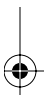


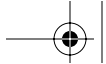
cooks must rely on the hunters to do their job before they can do the cooking. However, the fire starters need only know *how* to start their fires. When they start them is important, but not essential for them to do their jobs. The process of rubbing sticks or striking flint is independent and included in the overall process of killing and cooking a woolly mammoth. This defines the *process drivers*.

Finally, using spears to kill the mammoth may be less effective than using poison arrows. However, making spears is considerably easier than collecting and processing effective poisons to put on the tips of arrows. There is an economic tradeoff between using one technology and using another. After all, a hunter is only going to be as good as the tools he or she uses to do the job. The tradeoff between stone spears and poison arrows is an example of a *technology driver*.

The way these drivers are listed above exemplifies their order of importance. Without the need for food and warmth, there is no need to kill a mammoth in the first place. If our cavepeople were on a South Sea island where fish and fruit were plentiful and it was always warm, there would be no business driver to kill a woolly mammoth (plus the fact that on such an island, there would be no woolly mammoths to kill). Secondly, without people willing and able to do the job, there would be no threats to any woolly mammoth. Thirdly, even if there are people who decide to take on the job of hunting the mammoth, unless they know and coordinate what they are doing, their chances of success are pretty slim. The “enterprise” should then and only then begin to look at the tools available to get the job accomplished.

One of the major flaws of the Internet boom of the late 1990s was the all-out effort to fit the business models to the technology instead of the technology to the business models. Again, using our previous example, let’s say one of our cavepeople (a man) stumbles across a loaded elephant gun while hunting (we’ll ignore the obvious anachronism for now). He pulls the trigger, creates a frightening explosion, and almost blows his foot off. Well, this leaves quite an impression and he decides this thing is quite an attention-getter. He brings it back to e-design and fires it off in celebration of another successful woolly mammoth hunt! This makes him very popular among his fellow cavepeople. Now we can say to ourselves, “Use the gun to go shoot a woolly mammoth, stupid,” but we already know what the gun should be used for. Our caveperson is simply shaping the business model to the tool and not the other way around.





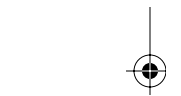
Eventually, the novelty wears off or he runs out of bullets, and soon the gun becomes a signpost. Our caveperson loses his popularity and the “elephant gun” market plummets. Was it up to the caveperson to be a good businessperson and use the elephant gun to shoot his own mammoth all alone and become “wealthy” in the eyes of his fellow tribespeople? Who is to say? The point of the story is, without keeping a clear eye on all four of the principles drivers of business, steering any business to success will be an iffy proposition, whether it is hunting woolly mammoths or running an “e-business.”

► Taking the Plunge

How does this example relate to real businesses in the real world? The approach to be employed in this book is to identify the drivers, investigate the relationships among the drivers, and then use the drivers to extract some fundamental principles of e-business. These principles will then be used to nurture and develop a framework that is relevant to e-business strategies. It will become evident that e-business and e-commerce are successful only in the context of an integrated approach. A technology-only approach will not work no matter how powerful the technology.

Enough has been published on the definition of e-business and the differences between e-commerce and e-business. In our observation of the e-world, we have developed models and definitions for e-business and e-commerce and their subcategories. While we felt it was important to distinguish them, our criterion was mainly focused on the degree of change the different categories of e-business/e-commerce imparted on organizations. Throughout this book, we use the words “e-business” and “e-commerce” loosely, often interchangeably.

To build a set of principles and a framework for e-business, this chapter discusses the fundamental forces that are driving the e-business phenomenon. The focus is holistic—we look at all the basic building blocks, namely business, people, process, and technology. We observe that with disruptive technologies like the Internet and wireless, it is very important to approach e-business with an integrated view, and think in terms of all the basic building blocks in parallel rather than serially. The four fundamental forces have also become so intertwined that it is often hard to distinguish which driver belongs to



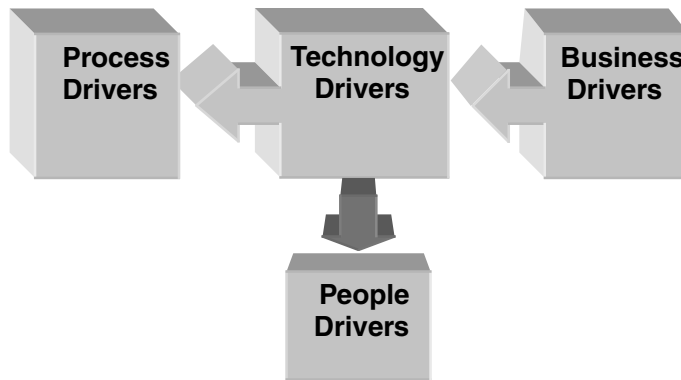
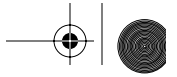


Figure 1-1 The original model and its four fundamental forces

which category. The old way of thinking looked like Figure 1-1 (not necessarily in sequence).

Our proposed model looks like Figure 1-2.

It is usually pragmatic to start with one driver (usually the business driver), but a sound business strategy needs to be developed in parallel from the very start. As depicted in Figure 1-2, the four primary building blocks are overlapping more and more with increased connectivity

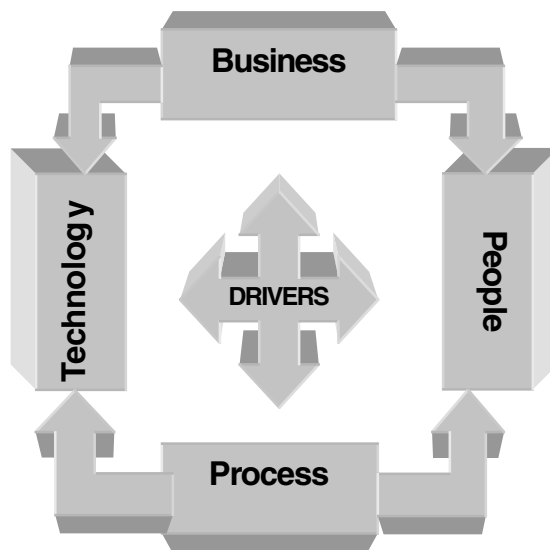


Figure 1-2 The four primary forces of our new model





to technology, but also from the business impact of the process, business, and people perspectives. These are the four building blocks that have the most impact on the “New Economy” organization.

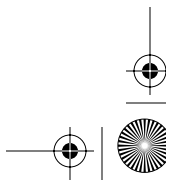
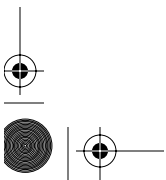
We should interject here that any business strategy devised, even with the 4D Framework, will fail without a full understanding of the current economic playing field. One does not build a boat unless one knows whether it will be used to cross a river, a lake, or an ocean. The financial conditions today are drastically different than just five years ago with varying opinions about just what those differences are. Simultaneously, we find ourselves in the “New Economy,” or “Knowledge-Based Economy,” or “Internet Economy.” By whatever description you call it, technology has fundamentally affected the world economy forever. Experts are still determining the overall impact to all of us, but that is well beyond the scope of this book. For our purposes, we will focus on the economic conditions and realities of what we will call the “Net Economy.”

The Net Economy has been created by new technologies, the skills and knowledge of people using these technologies, new and ever-changing business processes made possible by these technologies, and, of course, the defining and redefining of old businesses and new businesses focused on these technologies.

Figure 1–3 illustrates this point very well. The value creation in a Net Economy is a combination of the forces of all four building blocks. Here, the opportunity creation results in business value creation; customer attraction and retention create people value, and operational efficiency adds to process value creation. All of them combined create effective value creation. The technology building block is implicit in this diagram.

It is still too early to tell where the Net value curve is heading. In the recent past, growth rates of technology companies were as high as 60 percent, but recently these growth rates have slowed down considerably, creating the first economic downturn in 10 years—but a downturn like no other. The forces of optimism and pessimism both have clear-cut grounds on which to base a conclusion on the immediate and distant future of our economy as a whole. That may be beneficial as we develop sound business strategies for a less certain future, but build safeguards for future downturns while factoring in results for possible upturns.

As the 4D Framework is introduced, the realization of this fuzziness and fusion in the real world of e-business is emphasized. The basic



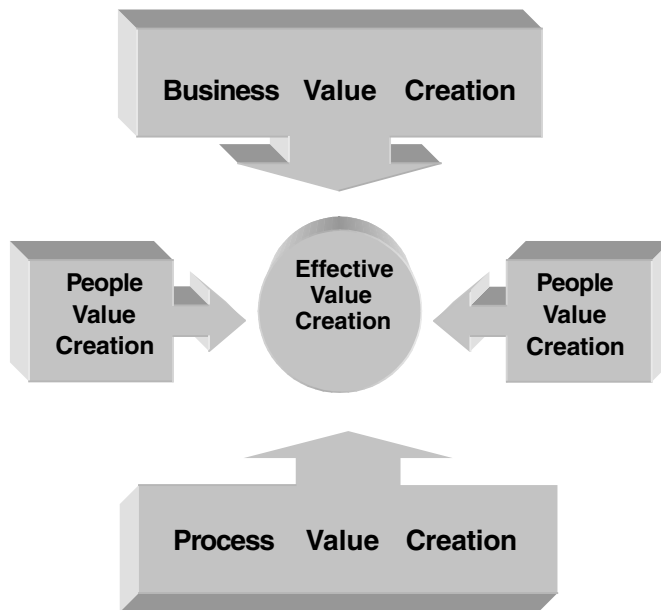


Figure 1-3 The Net Economy

building blocks are fused to give exponential value creation to the customer (see Figure 1-4). The multiplicative nature of these forces is clearly evident in this figure.

The multiplicative nature of these four forces (drivers) can be expressed in terms of an equation for customer value creation effectiveness:

$$\text{Customer Value Creation Effectiveness} = (B+T+P+Pr)$$

where:

B = Impact of the business drivers

T = Impact of technology drivers

P = Impact of people drivers

Pr = Impact of process drivers

But how can we use this formula in a real business using real dollars and cents? We'll use the first of many theoretical case studies to clarify the concepts of the 4D Framework. Let's start with the mythical YXZ Widget Manufacturing Company:

YXZ manufactures several different kinds of widgets and uses various components from outside vendors to manufacture each type. They

must buy these components ahead of time to ensure ample supply and must keep a regular inventory of completed widgets to meet unexpected demand, if any.

The YXZ manufacturing process suffers from inefficiencies because of changes in demand. For example, YXZ produces the Type A widget and the Type B widget in equal proportions, since the market demand, on average, is equal for both. However, Type A widgets are made of iron and Type B widgets are made of steel and steel is roughly twice as expensive as iron. So at the beginning of each month, YXZ purchases a half-ton of steel for \$1000 dollars and a half-ton of iron for \$500. It then produces 1000 steel widgets and 1000 iron widgets. They then sell 900 steel widgets to their distributors for \$1.10, 900 iron widgets for 60 cents, and keep 100 of each as inventory just in case. This gives them a gross profit margin of \$180 for steel and iron widgets, respectively. However, they do have 100 steel widgets, which could be sold for a \$10 dollar profit, and 100 iron widgets, which could be sold for a \$5 profit. YXZ must swallow \$15.00 when this inventory sits on the shelf. Fortunately, widgets are seasonal, with steel widgets selling well in the spring and fall and iron widgets selling well in the winter and summer. By the end of the year, their inventory is all sold off.

This is life in the “Old Economy.”

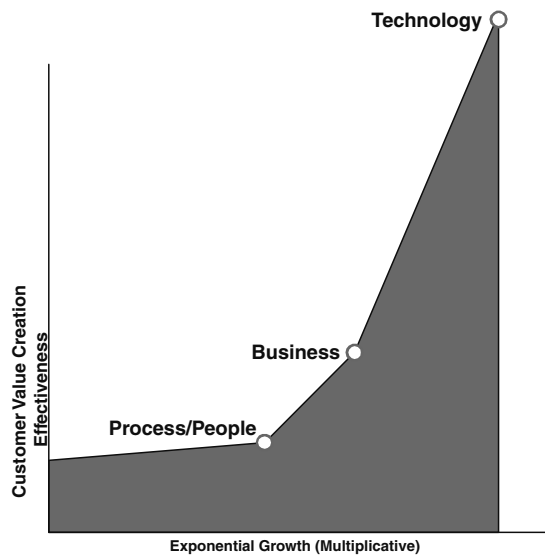
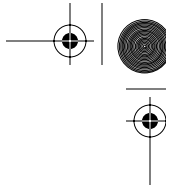


Figure 1–4 Customer value creation effectiveness



To move YXZ forward into the Net Economy, suppose the new chief technology officer (CTO) of YXZ Manufacturing has decided to go to a “just-in-time (JIT)” manufacturing system using Internet technology at its core. This means YXZ can now use the Internet to do the following:

1. Know exactly how many widgets are needed by using the customer site to preorder exact amounts.
2. Use a vendor intranet to order the exact amount of supplies needed to produce that order.
3. Eliminate the need for inventory.

In addition, widget supply descriptions can be fed directly into the automated e-design system so both iron and steel widgets can be made simultaneously without having to “refit” for one type of widget or another. This reduces overhead considerably and is much less labor-intensive. Now, let’s take a look at our Net Economy drivers and numbers.

Business—Reduce Inventory/On-Demand Product Personalization

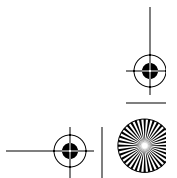
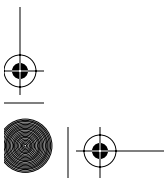
Since widgets are manufactured “on-demand,” there is no longer a need to create an inventory of 200 extra widgets. This extra \$15 can be seen as savings, added into gross revenue.

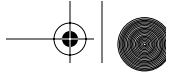
Process—Skilled Labor/Technology Specialists

It now takes an assembly line worker/supervisor who has some knowledge of the new intranet/supply/e-design system, and he or she needs additional training at a one-time cost, plus an additional \$5 dollars an hour for an 8-hour day. If each worker produces one order per day, the additional \$40 is easily offset by the \$105 dollars the technology saves. YXZ is still ahead \$60 per order.

Process—Applying Skilled Labor with High-Technology Processing Systems

The process of combining the \$60 saved by “upgrading” labor and technology with the \$15 dollars savings in inventory means a net of





\$60 per order plus the \$15 dollars. For 1,000 widgets we save a total of \$60,015.00!!!

Of course, these numbers are hypothetical and based on ideal assumptions, but the point should be clear. **Small incremental value savings, mean a lot when aggregated.**

Technology—Intranet Order/Supply Systems/E-Design Technology

Because the new intranet/supply/e-design system reduces refitting time by, say, 3 hours, where each hour costs \$35 dollars of skilled labor, \$105 dollars is now saved per order.

Of course, this example is not only mythical, it leaves out a considerable number of other “real-world” factors the average business must deal with, such as marginal and unit costs of production and overhead, distribution costs, taxes, etc. But we believe the point is made. There are real economic advantages that the Internet and other technologies do add to a business, provided they are integrated thoughtfully into the core business. With that in mind, let’s take a look at each of our drivers in more depth.



► Business Drivers

The different business forces that are driving the e-phenomenon are shown in Figure 1–5.

To Do Business All the Time

Many past major inventions—circular wheels, the steam engine, railroads, the automobile—have contributed to making great progress in trade and commerce. Then, theoretically, the e-design radio and television could connect the word electronically but it costs money to build broadcast radio and television stations. A lot of money. However, e-connectivity via the Internet has done what was simply not possible to do by other vehicles: It connected nearly the whole world in an easy, efficient, timely, and inexpensive fashion.



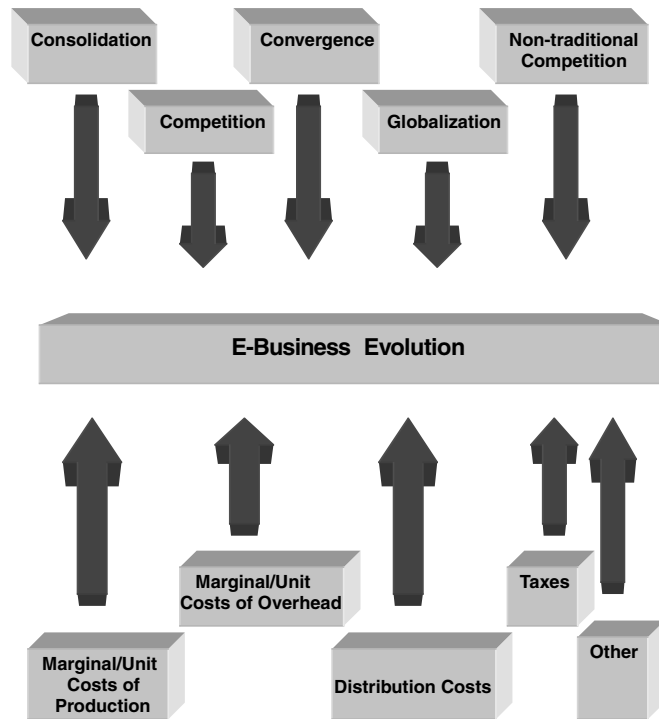


Figure 1-5 Business drivers

One of the early adoptions of the Internet by a mass audience was email. Email alone changed the landscape of global communication in a mind-boggling way. What used to take months, or even a few years in some countries, now takes minutes and the communication devices are so inexpensive that even economically depressed communities have access to them.

Therefore, the Internet enhances and supports business all the time, practically everywhere. Geography and time barriers are suddenly gone; in fact, time differences can be used very effectively to create continuous operations in manufacturing, programming, call center management, and customer service.

We have included the need for ubiquitous business as one of the business drivers; however, it is evident that technology is a very important component that catered to that need and may have even created it. The processes and people to support such businesses and technologies are also very closely tied together.

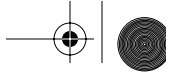


Figure 1–6 illustrates the acceptance of different technologies and shows how the e-phenomenon has been widely accepted worldwide to cater to business needs.

To Do Business Affordably

Efficiency, specifically cost efficiency, is usually the focus of businesses. However, according to Michael C. Jensen:

Value creation does not mean succumbing to the vagaries of the movements of a firm's value from day to day. The market is inevitably ignorant of many of our actions and opportunities, at least in the short run.²

During the days of business process reengineering (BPR), one of the main objectives was to reduce handoffs, which resulted in decreased cycle time and less overall cost. In many business processes, this reduction e-designer stood in the way of increased inventory turns and decreased labor. The e-phenomenon, when properly harnessed, enables businesses to operate in a very cost-efficient way, without costly and

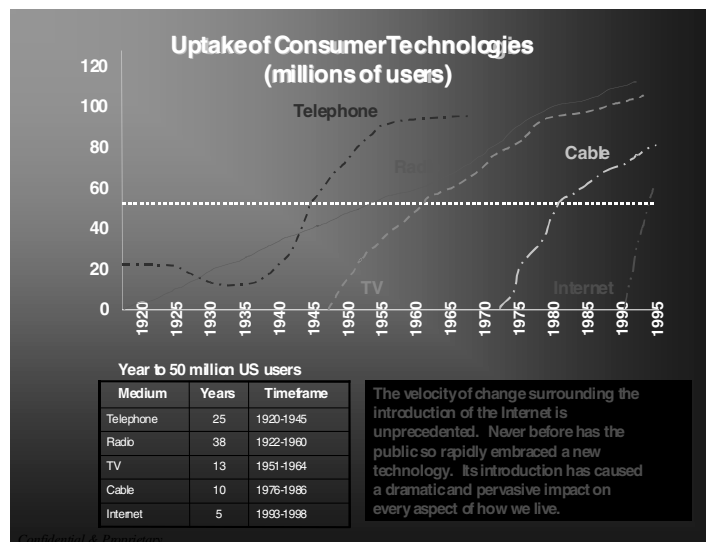


Figure 1–6 Uptake of consumer technologies

- Jensen, Michael C., "Value Maximization and the Corporate Objective Function," Harvard Business School Paper: 00-058.



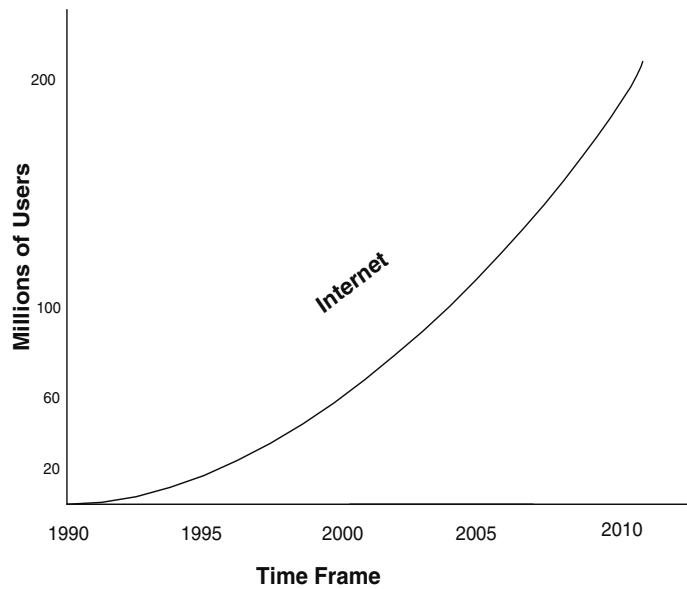
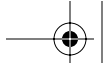


Figure 1-7 Illustration of the e-phenomenon's acceptance

dramatic reengineering processes such as the example described earlier (Figure 1-7).

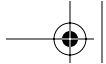
The pursuit of cost reduction as a means of increasing operational effectiveness is particularly pronounced in certain products and industries. The distribution costs of anything digitized (e.g., software, music, video) can be very minimal. The Internet provides a very convenient, cost-effective way of distributing these products.

Generally, any adoption of software, whether packaged or custom, is an expensive proposition. Because the Internet is based on an "open" standard, the costs of application development can be drastically reduced. Any expense is generally in the knowledge base of designers and developers and not necessarily in the software itself. For example, Java is free to anybody who knows how to use it. However, complex application environments and platforms have demanded premium dollars. As the Internet development industry matures as a whole, these costs will steadily decline as well.

According to Michael C. Jensen, "Purposeful Behavior requires the existence of Single Valued Objective Function."³ Reducing inventory,

3. Jensen, Michael C., "Value Maximization and the Corporate Objective Function," Harvard Business School Paper: 00-058.





or increasing inventory turns, is one of the main goals of business. Inventory can be reduced via several business models and operational efficiencies such as JIT, pushing inventory to suppliers, outsourcing warehouses, and efficient use of warehousing and logistics. Many companies are trying to reduce inventory by using the Internet and online shopping. Dell is a prime example of a leading company that has used online ordering directly by customers to reduce inventory significantly via accurate forecasting and super-efficient supply chain processes.

In the business-to-business (B2B) world, electronic catalogs are reducing costs in several ways. The distribution and printing expenses of catalogs are minimal; the associated cost of selling is also minimized. Complex procurement systems can interface with electronic catalogs and do fairly complicated configurations and pricing. This saves costs on both sides—the buyer and the supplier—in terms of labor, cycle time, and ease and volume of use. In addition, new information-passing technologies such as Extensible Markup Language (XML) and electronic data interchange (EDI) allow expanded data interchange across the Internet, regardless of what permanent repositories and databases this information is stored in. In this way, disparate companies can exchange data in a universal format without the costly and cumbersome porting projects required in the past.

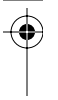
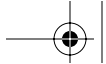
As these technologies take root and J2EE, .NET, and other advanced Internet programming technologies mature, doing business via the Internet will become as commonplace as doing business over the telephone. In fact, once data exchange across the Internet becomes standardized, Web technologies will be more ubiquitous than the telephone. The same data can be simultaneously sent over broadband, wireless, satellite, and even plain, old-fashioned telephone lines.



► The Net Economy Meets the Global Economy

The global village is truly coming to be a reality. While governments are trying to find new rules for taxation, customs, and security, the forces of globalization are continuing to dominate the Internet. According to Forrester Research, the rules of the Internet Economy are as follows:





1. Customer service eclipses the product.
2. Real-time demand drives production.
3. Pricing matches market conditions.⁴

Essentially, this model of business on the Internet is based on the relatively new idea of a network economy based on both “richness” and “reach.” In traditional network models, being able to reach a mass audience usually meant an inability to customize any function for smaller or even individual portions of the network’s customer base. Television, cinema, and telecommunications rely on sheer volume to make their numbers. Demographics and content targeting help, but out of three million people who watch the same commercial, only about 10 percent take any serious interest in the product being offered. The ideal would be to have all three million people see precisely the commercial on the product they would be interested in, whatever their individual interest. In other words, instead of driving the product to the customer, let the customer drive the product he or she wants.

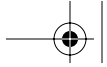
Although this promise has yet to be fully realized, even on the Internet, the following business dynamics described in the following sections are becoming a reality right now.

Global Competition

Competition is now unrestrained. The barriers to enter an e-business have been somewhat reduced: information is readily available, resources are available via communities and intermediaries, and communication is almost instantaneous. The velocity of new entrants is often mind-boggling. The marketplace is also behaving like the stock market, auction-oriented business models are getting popular, fixed pricing is being challenged, and price differences due to geography are fading away.

4. Forrester, “Dynamic Trade: Rules for the Internet Economy,” Netrepreneur meeting at the Morino Institute, March 1999.





Non-Traditional Competition

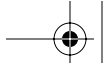
The Internet is giving opportunity to all and in very different ways. Since the barrier to entry to most businesses is lower because there is very little cost associated with using the Internet, it is easier for one type of business to get into other types of businesses. Banks are becoming investment brokers, and vice versa. Booksellers are not only selling CDs and other products, but they are also becoming auctioneers. The classic example is Amazon.com, which sells books, CDs, hardware tools, software, and more. Amazon.com is also aggressively pursuing auctioning. So, the traditional question, “What business are you in?” is taking on new meaning. It is also a debatable business model: Is this model sustainable long-term, or is it just an experiment of a new world that will ultimately fizzle away?

Communities

The Internet is providing the infrastructure of a true electronic bazaar. Communities-of-interest are cropping up and a very different set of rules for interaction is being established. These communities are interacting with each other, exchanging information, and generating value. Chat sessions, electronic billboards, and Web meetings are powerful tools that are giving communities the information they need, when they need it. Communities are also creating a strong market demand for products and services. For example, there are investment communities, engineering communities, sales communities, and project management communities that help foster communication among people with common interests. There are portal sites that bring certain ethnic communities together; for example, Satyam infoway has a portal (www.satyam.com) that brings the Indian community together to share their interests and ideas, regardless of their geographic location. There are similar portals for all social groups, religions, ethnic groups, and so on.

The dynamics of these communities and their influence on markets, on the purchase of products and services, and in bringing social changes have yet to be understood fully. However, their impact seems to be quite profound.





In the Old Economy, capital and labor drove the economy according to the following equation:

$$Eff = (Labor + Capital)$$

This gradually transformed into the equation:

$$Eff = (I sn * H)$$

where *I* stands for information and knowledge through social networking and *H* represents human skill sets.

The Internet is defining economic efficiencies in terms of this equation:

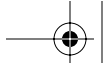
$$Eff = (I dn * H * T ff)$$

where *I dn* stands for information and knowledge through social and digital networking, *H* represents human skill sets, and *T ff* is for technology effectiveness. It is evident that digital communities are playing a major role in e-business.

Channels

In the initial wave of e-business models, people argued that the Internet would eliminate different “brick-and-mortar” channels and intermediaries and pass on the savings to customers. While this is true in certain industries, this has not always been the case. E-commerce intermediaries are becoming an industry by themselves. In either B2B commerce or business-to-consumer (B2C) commerce, there is a need for a complete solution. With the proliferation of products and services over the Internet, it makes sense to have some kind of solutions provider that gives value in terms of cost, efficiency, and quality. Cyber-mediation is providing this solution. For example, an Internet-based escrow company (*escrow.com*) is providing compelling value to a lot of e-sellers, especially from auction sites. In fact, all the portals like America Online (AOL) or Yahoo! are some sort of intermediary. The Old Economy intermediaries are also rushing into the Net Economy and providing value through meaningful aggregation.





Real-Time Demand and Supply

The availability of real-time data from internal sources like inventory and external sources like competitive pricing is creating a real-time demand/supply model, leading to price variations almost like the stock market. Companies are using auction strategies that are challenging fixed pricing. For instance, Sun recently introduced auction pricing on certain product lines.

New business models are emerging that allow prices to change in real time; for example, vending machines that vary price based on external temperature, season, or time of day. Forrester Research calls this mode of trading and price determination *dynamic trade*.

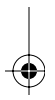
Auctions

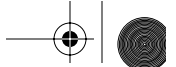
The above discussion leads to online auctions. The online auction is a multi-billion-dollar market and growth is exponential. There are two types of auctions prevalent over the Internet. The English auction, where open bidding starts with a lower price and the highest bidder is the winner is the most popular model. Most e-auctioneers like eBay do this low-to-high bid-type English auctioning. Reverse auctioning is just the opposite—it starts with a high bid and then lets the bidders bid down the price. The lowest bidder gets the deal. This is a good model for vendors bidding for a contract.

Auctioning is becoming a part of the business model of most companies selling over the Internet. It seems to be the closest approximation of a free-market economy as we see markets getting closer to “perfect information.”

Several companies started auctioning their own products via the Web. One of the pioneers in product auctioning was Sun Microsystems, when they announced this in September of 2000. CEO Scott McNealy signed a few limited edition Sun Blade 1000 workstations to hit it off.

Buying and selling products or services via English and reverse auctions have become extremely valuable vehicles for companies. Choosing to sell an item or service by auctioning it off is more flexible than setting a fixed price. It is also less time-consuming and less expensive than negotiating a price.





► People Drivers

People Make the World Go Around!

“Choice” is a powerful word. Disruptive technologies like the Internet and mobile and wireless technologies are giving choice to customers. Customers can get almost everything globally with competitive pricing and bids from the comfort of their home. For example, customers can get insurance information, shop for insurance, compare prices, and buy insurance in a few hours, sitting in front of a Web-enabled device. The device can be a terminal or other smart device.

Information is power. Multidimensional information flow and communication have given customers what they really want—choice. Powerful communities-of-interests are creating Web lobbies for products and services. Real-time prices, auctioning, and the power of information have enabled customers to use the Web as a vehicle to create communities with common interests. There are now multidirectional communication and information flows between product and service providers and customers. These benefit both buyers and sellers.

In the words of John McCarthy, Group Director of New Media Research at Forrester, “dynamic trade . . . [is] leveraging technology to satisfy current demand with customized response.”⁵

Companies are getting powerful demographic and behavioral information in real time; at the same time, customers are influencing companies to provide quality, products, and services at the right time. The definition of quality has gained more dimension also. It incorporates traditional quality, speed, interconnectivity, and community experience on top of core products and services. (See Figure 1–8.)

Industrial economies were built on the *mass production* business model. Companies built products and “pushed” those products using one-way communication (advertising and mass media) to markets. Enabled by the totally interactive medium of the Internet, consumers

5. McCarthy, John, “Dynamic Trade: Rule for the Internet Economy,” Netrepreneur meeting at the Morino Institute, March. 1999.



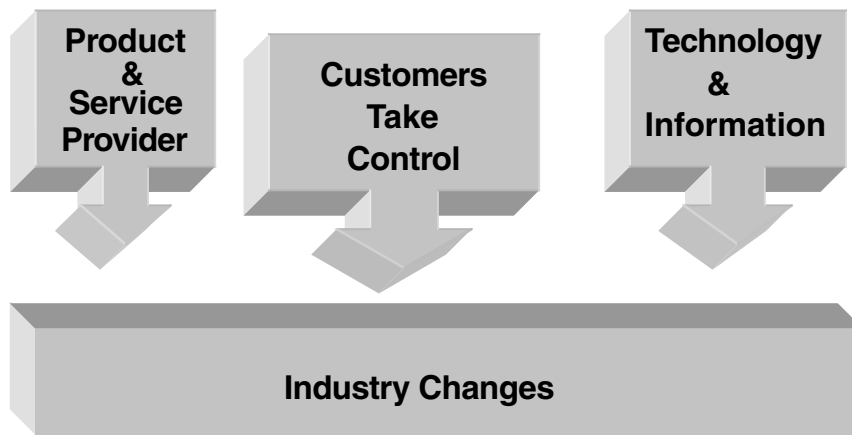
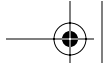


Figure 1–8 People drivers

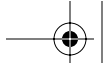
can now “pull” the information they want about products and reach out to all sources instantly. This information is power, and it fulfills one of the tenets of pure competition, a fully informed consumer. “Fully informed” means having access to information from other consumers as well as information about the products themselves. What we see happening now is the slow change from the economic model of “economy of scale” to “economy of focus.”

The Internet Experience

The Internet is allowing a different paradigm of mass production called *mass customization*, creating a world where real-time demand drives real-time production. It is not only allowing an enriched customer experience via real-time video, audio, and graphics, but also profiling customers intelligently and creating customization on a one-on-one level. Buyers are given assistance in decision-making, from loan calculations to comparative pricing and a multitude of options, which can be used by the customer to come to a decision. Payment processing has become quite efficient and secure. Back-end order processing and delivery are also improving in quality and speed.

However, it is not just trade. Chat sessions, billboards, and Web meetings are generating a very engaging Internet experience. Formal and informal meetings are being conducted and are becoming popular.





Teenagers are hooked on AOL chat sessions. Mobile, set-top boxes, wireless, and voice over IP (VoIP) have started to add to the Internet experience. As it stands today, the Internet experience can be encapsulated in three sets of coordinates (see Figure 1–9):

- Mass customization
- Self-service
- Communities

Mass Customization

The concept of mass customization has been there for a while, but the Internet is helping materialize the concept. Organizations can analyze the buying behavior of individual customers by tracking their electronic interactions and produce the right marketing messages, products, and services necessary for these customers. The intelligent Internet can keep all the customer information, update it, and depending on the buyer's demographics, psychographics, or any other model used to analyze the customer, deliver the right solution to him or her. This will lead to not just owning the customer for a window of time, but owning the customer for a lifetime.

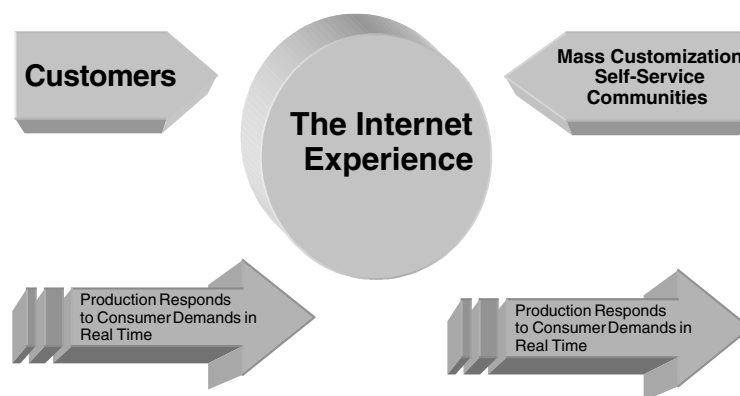
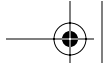


Figure 1–9 The Internet experience





Self-Service

Self-service on the Internet, if properly designed, can render great value to a customer. Customers will be empowered to track a parcel (e.g., package tracking system), resolve a technical problem, and perform other functions that would normally require human intervention and maybe numerous phone calls. If the site is properly designed and information is accurate, self-service can be a very meaningful experience for the customer and will be a win-win for both the e-organization and customer in terms of cost, experience, and time saved.

► Process Drivers

Transformed Processes

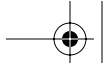
E-business is often about transforming end-to-end business processes. This means eliminating costs, reducing handoffs, effectively using resources, and creating horizontal processes that are aligned with the value chain (defined later).

E-business, especially transformed e-business (see the later definition), forces some very interesting process issues. Thomas H. Davenport states in his work: "In definitional terms, a process is simply a structured, measured set of activities designed to produce a specified output for a particular customer or market. It implies on how work is done within an organization..." He then continues: "A process approach to business also implies a relatively heavy emphasis on improving how work is done, in contrast to a focus on which specific products or services are delivered to customers."⁶

A business process approach is therefore a way of doing work that is necessary to add value for the customer and also all the links of the value chain. In the context of the Internet, business processes are taking two distinct perspectives: digital processes and traditional processes. As with anything else, there are mixed processes. A digital process is, for example, a Web-based ordering system that captures an

6. Davenport, Thomas H., *Process Innovation* (Boston: Harvard Business School Press, 1993).





order, authenticates the buyer, gets the customer profile, authenticates the payment, and places the order. A traditional process is the logistics part, where the order is physically delivered via mechanical means (e.g., a van). Again, nothing is a pure digital or a pure traditional process, but we are categorizing them as such at a conceptual level. In practice, the line is getting fuzzier every day.

The original BPR experts of 10–15 years ago had a vision in the right direction; they were cutting down the number of handoffs between people and divisions and reducing the communications barriers. However, technology was not as pervasive as today; emails were still new, mobile and wireless technology were very immature, and communication was costly. So, they had to make some disruptive organizational changes and often did it with poor communication and change management in place. This caused resistance throughout the organization. BPR also became a fashionable “buzzword” at executive levels, and top executives promoted their own selfish agendas rather than what was good for the customers and their organizations as a whole. This did not happen because technical managers were unscrupulous or unethical, but because the “closed” technologies of the past created “closed” internal economies. There was a buy-in, both technically and economically, around a particular platform, and usually the investment in terms of both dollars and time was considerable. Very few managers, once making such a commitment, wanted to change paths with another technology, even if it could do a specific job better, without some kind of a fight. In addition, since these decisions were made by a select group of “insiders,” there was little accountability once the decisions were made.

The Internet is a great equalizer. The primordial forces are at play here. An email cc’d and/or bc’d to the right people holds them accountable in ways never before possible. A simple cell phone can cut down on hours and days of miscommunication—this can happen globally and literally instantly. Digital processes are changing work processes in a forceful, but nondisruptive way. The beauty of this streamlining is that it is not creating people resistance similar to what happened in the BPR era of the late 1980s and early 1990s. With open and effective communication, people (including upper management) cannot hide issues as much as they could previously.

So, the Internet has taken process transformations to a new level. However, the traditional processes and old handoff issues are still





there. They have just taken on a new form. As shown in the previous example of Web ordering, the order taking, credit card verification, and payment transactions form the hyper-efficient digital process, but the order still needs to eventually be delivered via traditional processes. A perfect digital process can still reduce cycle times, but a handoff to a physical logistics part can still be broken. No matter how many orders for widgets are taken online, someone must still be notified to pack and send the boxes containing the order. Any bottleneck will lead to unacceptable delivery cycle times.

So, brick and mortar are not just going away. The new cliché is “click in a brick.” Digital processes will coexist with traditional processes. Successful Internet companies have opened or outsourced warehouses (and logistics) and have integrated the warehousing and logistics systems with their Web-enabled order processing systems.

The dot-com bust is pointing to one very important lesson we all have learned: All aspects of business, people, process, and technology are critical for the success of any business. E-businesses have great potential only in conjunction with time-tested principles, methods, processes, skills, and sound business practices. E-hype is over.



► Technology Drivers

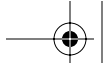
Connectivity

The fast pace of technical innovation has created a huge, amorphous mass that facilitates connectivity globally. Wireless, Internet, and mobile technologies are all converging and creating connectivity at the hardware and infrastructure levels, at the application level, and at the business level. Increased computing and communication power has led to the demand for intelligent products and services. Flexible frameworks/architectures tie all these products together.

The following is a vision often shared by Sun CEO Scott McNealy:

Imagine being in your car on the way to a meeting and you can't remember the location. You activate your wireless device—your mobile phone or Palm Pilot for instance—simply by speaking. No





one else can activate your device because your voice has been authenticated. After a location search engine reports heavy traffic on the route you were going to take, it suggests an alternate path. You arrive at the meeting with time to spare and you could really use a cup of coffee. Your device directs you to the nearest coffee house and you make it back to the meeting feeling revived.⁷

While this may not be exactly what can happen, it shows the power of connectivity to enable a process and a business outcome. An important aspect of this connectivity is the creation of architectural frameworks that not only integrate Java-enabled handsets, Internet-based networks, and smart calendaring solutions, but older technologies like phone and fax.

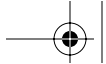
This connectivity of infrastructures is forcing applications and business processes to integrate and align. Customer care, supply chain, and Internet markets (I-markets) are creating cross-organizational perspectives and forcing the creation of frameworks that can handle this whole fuzzy mass of “things.”

The other aspect of this connectivity is the feasibility of creating new business models, new team-based and networked organizations, and cross-enterprise value chains. What this means in real terms is that technology has matured to the point that:

- **Anyone can connect anywhere, anytime**—This sounds like a cliché, but this is really what is happening. Information technology (IT) organizations are working very hard to put infrastructures, applications, services, and processes together to make this happen. The connectivity needs are 24/7, 365 days a year. Response times must be within tolerable limits, and applications need to be reliable and consistent in their behavior. Service organizations are talking about continuous service, continuous capacity planning, and continuous software change control.
- **Global markets and services**—Connectivity is cutting down all barriers to entry on a global scale. It is also allowing customer service centers and IT operations centers to take advantage of the time differences between countries and provide 24/7 service. The other effect of this connectivity is transparency. Best-of-breed products, pricing, and services (pre- and post-sales) are available to almost anyone who is connected.

7. Sun Microsystems, Inc., Web site, April 2000.





- **Need for systems, processes, and old-fashioned business backbone**—The new Net Economy needs old disciplines. Data center processes are becoming increasingly important. Teaming and project management disciplines are being reinforced. Just as client/server systems co-exist with and leverage mainframe systems, so will the newer Web-based technologies and systems integrate and use even older disciplines. Most successful e-businesses deploy this mixed strategy of Old Economy, brick-and-mortar processes with digital processes, hence the phrase, “click in a brick.”
- **Intranets/extranets/the Internet/wireless/mobile**—All will merge into one big, amorphous mass and compartmentalization will become increasingly difficult. The whole e-world will become fuzzier than ever.

Anywhere

The “anywhere” aspect of the Internet has some interesting dimensions:

- Access to the Internet allows almost anyone, anywhere to have a Web storefront and conduct business. So, essentially, any business can be global in nature. In that way, the Internet is a level playing field.
- With barriers to entry reduced, capital investments are reduced because a Web storefront is not cost-prohibitive. However, any organization has to plan for these two aspects since the Internet can work as easily for the competition.
- The other dimension is that physical connectivity to the Internet can be increasingly achieved from anywhere. People can connect to the Internet via any device (mobile, wireless, etc.) and from “anywhere”—airport, home, office. These attributes form a fuzzy environment for business with extreme competitiveness on one hand, complex order-taking and delivery on the other, and a demand for goods and services in the marketplace that is quite unique. All aspects of business, people, process, and technology come into play. “Anywhere” is making the interactions between B2B and B2C much more complex.





Lightning Speed

Speed is at the core of the Internet revolution. New product introduction, time to market, ordering cycle times, and inventory cycles are all being challenged by faster and speedier requirements. Time is money, and reduced time means lower costs and greater customer satisfaction.

We know about JIT inventory—in the software marketplace, small releases are constantly being pushed via the Web as continuous and quick updates to existing products. JIT software releases are possible because of the Web.

Again, the speed gained by digital processes needs to go hand-in-hand with physical processes for the Web to be effective. That brings up the point that old-style process management and good overall process design are essential for both speed and productivity.

Convergence

The marketplace and customers are converging (see Figure 1–10). With the advent of mobile and wireless technologies—embedded devices and the Internet as the backbone—a global marketplace is converging into the Internet. Embedded devices in any product—cars, airplanes, refrigerators—can send alerts on possible product failures, the need for routine service, diagnostics, and so on.

Mobile workforces are being linked globally. PCs, TV, and telephony are all merging into the Internet. The possibilities are endless. The following scenario is often talked about:

A refrigerator, which can detect quantities of food, does an inventory check and sends a grocery list, via the Web, to the grocery store. The grocery store automatically replenishes the food and delivers it to the door. This can be further extended by allowing the home security company to know when the grocery van will arrive to allow the deliveryperson to get in for an allotted timeslot via some secured entry.

However, under certain circumstances and depending on peoples' cultures and ways of doing work, some may not adopt such a Web order-



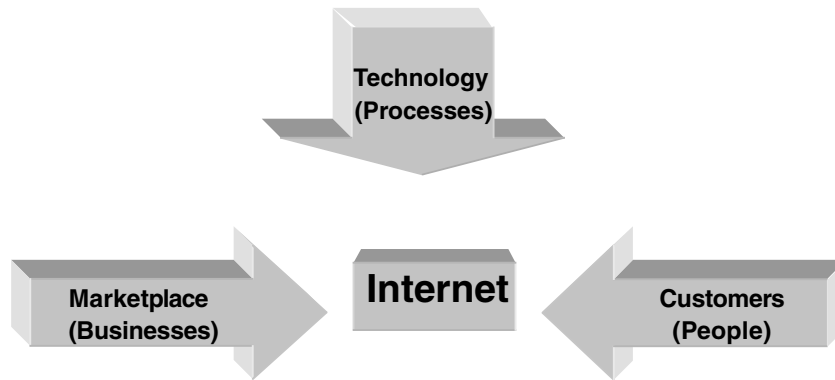
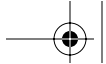


Figure 1-10 Converging forces

ing and security scenario. But the fact remains that the Internet has become a technology backbone where other technologies are converging. This will force changes in business processes, work processes, and individual lifestyles and thought patterns. Converging technologies are forcing convergence in businesses, people, and processes in both our personal and professional lives.

