

1.1 HISTORY OF INTERNET

The Internet had its roots during the 1960's as a project of the United States government's Department of Defense, to create a non-centralized network. This project was called ARPANET (Advanced Research Projects Agency Network), created by the Pentagon's Advanced Research Projects Agency established in 1969 to provide a secure and survivable communications network for organizations engaged in defense-related research.

In order to make the network more global a new sophisticated and standard protocol was needed. They developed IP (Internet Protocol) technology which defined how electronic messages were packaged, addressed, and sent over the network. The standard protocol was invented in 1977 and was called TCP/IP (Transmission Control Protocol/Internet Protocol). TCP/IP allowed users to link various branches of other complex networks directly to the ARPANET, which soon came to be called the Internet.

Researchers and academics in other fields began to make use of the network, and eventually the National Science Foundation (NSF), which had created a similar and parallel network, called NSFNet, took over much of the TCP/IP technology from ARPANET and established a distributed network of networks capable of handling far greater traffic. In 1985, NSF began a program to establish Internet access across the United States. They created a backbone called the NSFNET and opened their doors to all educational facilities, academic researchers, government agencies, and international research organizations. By the 1990's the Internet experienced explosive growth. It is estimated that the number of computers connected to the Internet was doubling every year.

Businesses rapidly realized that, by making effective use of the Internet they could tune their operations and offer new and better services to their customers, so they started spending vast amounts of money to develop and enhance the Internet. This generated violent competition among the communications carriers and hardware and software suppliers to meet this demand. The result is that bandwidth (i.e., the information carrying capacity of communications lines) on the Internet has increased tremendously and costs have dropped. It is widely believed that the Internet has played a significant role in the economic success.

1.2 HISTORY OF WORLD WIDE WEB

The World Wide Web (WWW) allows computer users to position and view multimedia-based documents (i.e., documents with text, graphics, animations, audios and/or videos) on almost any subject. Even though the Internet was developed more than three decades ago, the introduction of the WWW was a relatively recent event. In 1990, Tim Berners-Lee of CERN (the European Laboratory for Particle Physics) developed the World Wide Web and several

communication protocols that form the backbone of the WWW.

The Internet and the World Wide Web will surely be listed among the most significant and profound creations of humankind. In the past, most computer applications ran on stand alone computers. (i.e., computers that were not connected to one another) Today's applications can be written to communicate among the world's hundreds of millions of computers. The Internet makes our work easier by mixing computing and communications technologies. It makes information immediately and conveniently accessible worldwide. It makes it possible for individuals and small businesses to get worldwide contact.

In the last decade, the Internet and World Wide Web have altered the way people communicate, conduct business and manage their daily lives. They are changing the nature of the way business is done.

1.3 WHAT IS "ELECTRONIC BUSINESS"?

Electronic business (e-business) is comprised of e-marketing, e-commerce, and e-operations. Let's look at brief definitions of them, respectively, to begin this course with the top summary view.

E-business: The application of Internet technology to streamline all aspects of business processes.

E-marketing: Building an online presence, showcasing a company, and providing detailed information. (The majority of small businesses on the Internet today are actively doing e-marketing.)

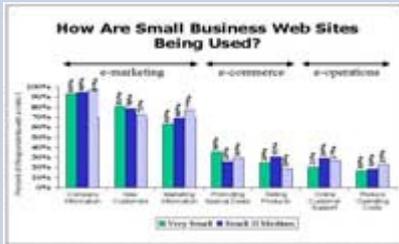
E-commerce: Selling products and services online, conducting payment, handling transaction details, and supporting automated customer inquiries.

E-operations: Streamlining of business processes and steps to enhance business efficiencies between functional departments of a company. (This also includes streamlining the supply chain between your company and key suppliers.)

Taken together,

E-business = E-marketing + E-commerce + E-operations

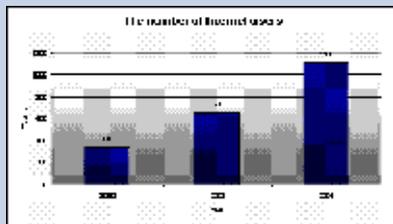




The companies that want to enter to e-business world generally start with e-marketing. The next level is e-commerce. And, the third aspect of e-business is e-operations. The Yankee Group, one of the leading research providers tracking small business adoption of the Internet, has completed surveys of very small businesses (2-19 employees), small businesses (20-99 employees), and medium-size businesses (100-499 employees) to find out how they are using their Web sites. The results are shown in the following figure.

(Figure 1.1)

1.4 THE FUTURE OF E-BUSINESS



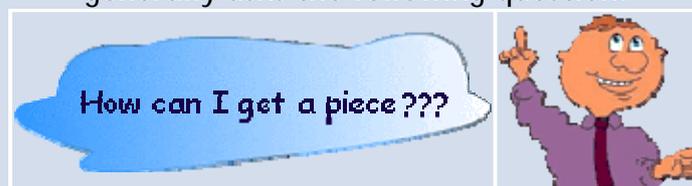
Each year, more and more people get connected to the Internet. In 2000, 330 million people were online. In 2003, that number was 650 million. In 2006, that number hit to 1,1 milliard.

Ultimately, those people will make their way around to buying something or just visiting a company's Web site. Once they get to the site, it is important that something be there the people want to see and buy.

But the coverage of the business that can be picked up from the Internet is not limited to people sitting in their living rooms surfing the Web. Businesses that sell to other businesses are discovering just how useful the Internet is to reinforce existing business partnerships and look after new, profitable relationships.

1.5 THE EXPLOSION OF E-BUSINESS

E-business is still young and shaping, and the future looks nothing but bright for companies that decide to perform business online. A business professional generally asks the following question:



The answer comes from the level of involvement and willingness of a businessman to make some hard business decisions. Some companies naturally bring their own name recognition to the game, thus gaining instant customers.

Victoriassecret.com is one of the good examples. In late 1998, just three months

before officially launching its Web site, Victoria's Secret posted a display page at the site's address. The page requested that visitors leave their e-mail addresses. Even without advertising the address, the company collected e-mail addresses from more than 300,000 customers.

That is great for a company with such strong name recognition as Victoria's Secret, but they are not the only ones doing well. Think about all the e-business sites you routinely visit—were they all well-known companies before the Internet? If you frequently visit sites like Amazon.com, eBay.com, or hepsiburada.com, then you see the power of the Internet.



Other forward-thinking business professionals and customers see the power of the Internet too, and that is why it is becoming more and more powerful. There is to offer everything in World Wide Web (including online stores) that is why, customers are drawn to the WWW. This, in turn, brings more businesses to the Web in search of the customers, which brings more customers to the Web and so forth.

1.6 THE BENEFITS OF E-BUSINESS

By taking a business into the Internet's kingdom, a businessman opens the operation up to vistas a businessman would never encounter if he were limited to a shop on Main Street. The benefits are great. If a businessman design and implement the e-business correctly he will see great advantages. The benefits of e-business can be summarized as:

What can the Internet really do for your company ?

A LOT

- The opportunity to access new markets across the globe
- The chance to target market segments more effectively
- The greater speed in getting the product and services to market
- Provide more accurate information and improve customer service experience
- Provides convenience and comfort for customers
- Allowing 24/7 access to the firm's products and services
 - The opportunity to increase sales
- The opportunity to reduce costs of production by reducing overheads - for example, not having a retail outlet in a busy high street location with high rents, reducing stock costs etc.
 - Improves the efficiency of the supply chain
 - Improve employee motivation through more flexible working methods
- The opportunity to seem a big company even you are a small one

The above benefits mainly related to **speed, financial issues, enlarging the market, and appearing bigger**. Let's say a few more words about them.

Speed

In the past, if a businessman wanted to sell something, he had to:

- rent a storefront
- hire employees
- stock the shelves
- spend a few cash on advertising
- maybe mail out some catalogs and
- wait for customers to come in or mail in their order forms

However, by the help of the Internet, the time between developing your product or service and having it ready for the consumer is cut down considerably. Obviously, businessmen are more close to the potential customers. Once a product is ordered, it has to work through the shipping and handling channels. In fact, some e-sellers have collocated their warehouses with the post office, cargo firms (ex. Federal Express, MNG, Aras, Yurtiçi) to cut down on shipping times. In addition to speed, there's more availability of products than in a conventional store. As a customer, you could simply log onto a site like *hepsiburada.com*, find exactly which product you want, type in your credit card, and wait for the package to arrive. Even if *hepsiburada.com* does not have the product in stock, there are more sites out there where you can find what you are looking for.

Financial Issues

Whether it is a street vendor stand on the side of the road or a multinational corporation with thousands of employees, the whole reason businessmen want to take their organization to the Internet is to make money and lots of it if possible.

If the lessons of the past continue, there is money to be made on the Internet. Consider the example of Amazon.com founder Jeff Bezos. Starting with just three Sun workstations and a dream, he turned his garage in suburban Seattle into the biggest success story of the Internet. Businesses know that "there's gold in the Web." The fantastic growth and business presence will continue and mean more money for e-businesses that know what they're doing.

The reason to be
in a for-profit
business is to make
MONEY!

Enlarging Market Appearing Bigger

The Internet helps for pulling the world closer together and expanding business contacts. When customers go to an e-business site, they do not have to physically go to any store. Once they get online, their computer will link to the e-business, where the customer can browse, shop, and make a purchase. Actually, the physical store (if there is one) could be thousands of miles *away* from the server

from the consumer. Internet is bringing your company with its products and services to people anywhere in the world.

Physical limitations need not keep anyone away from your e-business



Appearing Bigger

The Internet is the great equalizer. Even if, you have a small company, you may seem a big one. Everything comes across to the customer the same way—it comes across on the customer's computer however the company presents it. It does not matter whether you, as a businessman, have a tiny little shop or a big company having a giant store right off the interstate. On the internet, the only thing limiting a small business' presence is itself.

When you are developing a Web site, the only thing that limits your presence is your ability to develop the Web page. To be sure, the big companies hire big shot consultants, but with a little knowledge, a little effort, and the right software, every one can develop an excellent Web site.

1.7 SUCCESS IN E-BUSINESS

Up until early 2000, it seemed that in the kingdom of e-business, every company that went online was successful. Then the bottom dropped out. From now on, it seems clear that not every business's online presence will be successful. So many companies tried their own hand at online success. Some won; some lost. Let's take a look at two examples of e-business: Amazon.com, Toysmart.com

Case Studies:

[1. What Works](#)

[2. What Doesn't](#)

Usually, managers, CEOs, and presidents think they can simply move their businesses online and expect to conduct business as usual. But that is not the case any more. Since e-business is a marriage of business and technology, it is infinitely significant to understand the technological side of the union along with how technology affects the existing business.

Reformation in Your Business

Technology is a major component of e-business. Therefore, business changes are harder to manage because of the total amount of the changes. Value in an e-business is different than value from conventional businesses. E-businesses value is not found in tangible properties, like products, materials, surplus, furnishing and so on. Rather, value is found in intangible ones like branding, customer relationships, and supplier integration.

E-businesses should alter the environment and adapt to the changing marketplace

in which they compete in order to modify the flow of information requires companies to change. Changing only delivery of their products won't be enough. Unhappily, many businesses have not developed an information-based business design to deal with the necessary business change. An enterprise must develop a precise plan to accommodate the increased flow of information.

When managers are overconfident, not able to foresee change in the market place and not able to implement changes; companies are failing to change at all or not changing fast enough or effectively enough to hold off disaster. The problem sits squarely on the shoulders of management. The managers can also fail to manage properly once the changes have been made. They have to see the changes before their competition does, make rapid changes, and be able to make drastic changes to their business model. There are different customs for the change in business models: **Outsourcing, Tearing Down, Building up**

1.8 Outsourcing, Tearing-Down, Building -Up

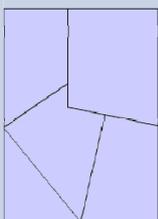
Outsourcing

Companies can get the help they need from third parties, as companies can not do everything on their own. To manage the rapid change, many businesses have seen *outsourcing* as a solution. Outsourcing comes in many sizes and shapes. At first, outsourcing was focused on *technology management*. Recently, *contract manufacturing* has become popular in the technological world. However, the two parties must work closely together, even as the work is given out to another company. In such cases, the job has to get done quickly, effectively, and efficiently. That means that the outsourcing company must act almost as a partition of the contracting company. The complex outsourcing alliances aren't just a simple, fashionable way to do business. They are critical. As technology develops and expands, outsourcing alliances become easier and easier to implement, especially if both sides are using compatible business application software.

Managers simply do not have the tools they need to stay on top of all the changes in business, so they must find a helper who can assist them stay competitive.

Tearing Down

Your organization's big picture



Examining the individual pieces can reveal the new ways to provide value!



The customer needs being served specifies the businesses value, not the products they sell. Businesses may try to separate the resources (in this case, the product) from the ends (the customers' needs). This process calls for your business to recognize, value, and care for what your business is all about. Eventually, this will guide you to re-examine what service you are providing to your customers and what role your products play in that service. In this way, managers take apart the business, rethink its core purpose, and spot where new value can be developed and created.

Tearing-Down your organization can provide the v

Building Up

Once a company has been tearing down and studied, it must be recombined. Recombination allows a businessman to make more efficient the company's value chain, and it also serves for customer's needs in significant and valuable new ways. Recombination allows new and growing companies to serve a new niche.

Now, let's look at example of Priceline.com.

There was no lack of travel companies operating on the Internet, before Priceline set up virtual shop. The travel industry had not given up all its business to the Internet, but there was a reasonably strong presence of online travel agents. The Priceline founders analyzed an important need—lower price—and figured out how they could deliver less expensive airline tickets, rather than looking for another way to sell the same product.

The Priceline's founders determined that customers would not only like less expensive tickets but would actually enjoy make offering for them. This was the result of tearing down the business and looking at it from the customer's point of view. While developing an e-business, using technology to recombination the value chain is very important.

A businessman can go after the following steps to effectively tear down and recombine his business:

1. Challenge the traditional ideals of value.
2. Define value in terms of your customers' needs.
3. Engineer the end-to-end value stream.
4. Create a new technology-based enterprise that is based on customer needs.
5. Make sure your company's leaders understand how to continue the self-examination process.

1.9 CHANGE YOUR PARADIGM

In every business, especially while adapting a company to an e-business environment, if a businessman want to make customers happy he must deal with at least one (if not all) of these four points:

- **Price:** No one will ever think they spent too *little* for something and no one likes to think they got cheated. Businesses that offer unique services and products for a reasonable price will do well.
- **Convenience:** The efficiency is critical word in dot-com world. One-stop shopping is pleasant, but customers also want the process to move smoothly and with few steps.
- **Speed:** To stay competitive, a businessman must deliver the products and services as fast and efficiently as possible. No one likes to wait.
- **Personalization:** Treating your customer as individuals is what they want. The more choices customers get for their products, and the fewer decisions made by the



Locate your e-business
apart from other
e-businesses even
the company's
physical store.

company, the happier they will be.

As you develop your company to compete in an e-business arena, you should be thinking about how you can use technology to address these needs. If you can shape it out, you will be a step ahead. Innovative businesses look at what *new* things customers want, rather than the differences among the customers. Don't focus too much on market segmentation—that only works in a stable business climate. In the promising world of e-business, “stable” is not a word that is used very often.

Technological Changes

Technology can change your customers' view of value. All of the services that mentioned above - price, convenience, speed, and personalization - have grown critical in the high-tech world in which we live. Customers are now faced with many companies offering the same goods and services. Because of this information overload, customers find themselves making decisions based on:

- **The cheapest:** All the extra costs between the manufacturer and the customer should have been minimized in order to be competitive.
- **The most familiar:** Brand recognition by customer is extremely important especially in e-business environment as they can't touch, taste, or feel what they are buying.
- **The best quality:** It means giving the customers what they want, when they want it, and at a value they are pleased about. It is a moving target, and one of the most critical issues for any business.

Changes for the Customer

Customers know that better technology should result in a better shopping experience. In e-business, a businessman should find the services that they want in order to attract customers and present something new and valuable.

Particularly in the case of e-business, customers generally provide data about their shopping experience while entering the Web sites. Therefore, customers have come to expect a little something extra for their cyber practice. That extra value is something that creative businesses understand their customers and what their customers want will develop.

Just to push products into the market is not enough. Companies that realize the value of using technological improvement to serve customers will be successful. One of the problems that many e-businesses experience is that they simply build a Web existence to have a Web existence. There has to be something that brings customers to the business that they cannot get anywhere else.

1.10 INTEGRATING TECHNOLOGY INTO YOUR BUSINESS

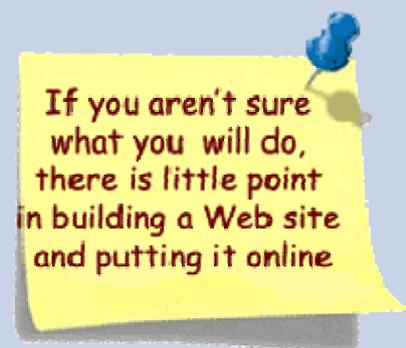
Integrating technology into e-business is not as simple as it may seem. To make an

effective, useful solution, you must make some complex technological changes. The necessity for integrated applications is more important where e-business is concerned, since; customers expect and want something more out of online businesses. With the knowledge that shopping efficiency is a factor in business design, the need for an integrated infrastructure should become very clear.

Integration means that your organization must have a solid, faultless set of applications that must work fluidly. The process requires a major application renovate so that you can develop a back-end infrastructure that permits your e-business functions to work faultlessly.

Are You Ready to Integrate?

Frequently, managers put the responsibility for the e-business squarely on the shoulders of their IT managers. The responsibility for the technological side of an e-business solution is the IT manager's department; however, the business planning and modeling behind the solution should not be delegated to the technical department. A manager should develop an e-business solution to identify how he can deliver what the customer wants via technology. In many cases, it is found that integration is not simply a technological barrier that must be discussed. Now, let's consider Manna Freight Systems of Mendota Heights, Minnesota [3].



To remain competitive, Manna developed a computerized system that links them with airlines and trucking companies. Manna is linked via computer with their subcontractors. Unlike other cargo companies, Manna is able to discover if there is enough room in an airplane before it lifts off and before the customer's goods are left behind, causing a late delivery (Figure 1.5). Once Manna discovers there is a problem with a particular flight or transporter, they are able to check with their online system and locate another mode of transportation. This system has afforded the company a 95 percent on-time rate. This shows how application integration enables Manna to serve its customers in a more effective way than the competition can.

Getting It Together

To make an e-business strategy work, organizations must pay attention to new architectures that support organizational liveliness in terms of business applications. To be profitable, the company must be able to meet the needs of the market without extreme costs, unnecessary delays, organizational interruption, or loss of performance. The organizations must be level with your customers' needs: diversity, price, quality, and fast delivery. The models becoming increasingly popular are customer-centric and support a number of complex business designs. If you have a static model with no room for change, none of these needs can be met.

When designing an integrated, lively e-business infrastructure, it is necessary to

make well researched and tended decisions in many different disciplines. Frequently, e-business infrastructures fail somewhere between the problem and the solution execution slipped off the path; not because the technology was not working. The main reasons e-businesses crash into trouble can be summarized as following:

- Poorly linked solutions to an organizational plan
 - Faulty strategies and tactics
 - Improperly executed plans
- Failing to understand all the faces of organizational problem

1.11 SPECIFY YOUR CUSTOMER

At first, one might think that there is only one type of customer out there—someone at home surfing around for goods or services. This is an important customer; however, the Internet is also suited for business-to-business (B2B) sales. In actual fact, if you have a supply-chain partner with whom you need to be in steady contact, the Internet can provide a low-cost connection between your companies. Businessman should define who are their customers and why should target them.

Public

Consumers account for about 10 percent of all online sales. It is actually most often the smallest share of the e-business pie; even though it is the one we hear about most often. It is important to recognize how to get at that 10 percent, if your business provides to the public.

Consumers want good contract, efficient transactions, and honest customer service. Almost certainly Consumers are the most inconsistent and the hardest to sell to. You must ensure that you have something that they want—or at least you have it cheaper than the competitor, if you want to attract consumers to your e-business. Consumers expect a little more out of the Internet. They want it cheaper, faster, or they want something special with it. There is sure to innovate something new and exciting that the general public wants will take e-business to the next level.

Business to Business (B2B)

Supply chain management basically is the coordination of material, information, and financial flows between and among supply chain partners. The explosion of the Internet allowed the companies to combine their internal systems with its suppliers, partners, and customers. This synthesis improves efficiency and effectiveness especially in supply chain management by making companies integrate systems they share with other organizations. With the Internet help to assemble information between your company and your partner, you will cut costs and overhead. Let's see an example: PartMiner.com [3]

Atlas Services, one of PartMiner's partners, is a \$300-million-a-year distributor of electronic and computer components. When Atlas Services gets an invoice of materials from a computer manufacturer, it goes to PartMiner.com and finds out which suppliers have the parts on hand. PartMiner.com eases the buying and selling of electronic components on the Internet. After switching to the Internet to fill order, extremely time-consuming telephone-based effort was drastically declined and Atlas has saved 15 percent on product-procurement costs.