



# Chapter One

## Introduction to Electronic Commerce (eCommerce)

### Objectives

In this lesson, you will learn about:

- ✦ What eCommerce is and how it has evolved
- ✦ Why eCommerce is changing the way businesses operate
- ✦ How eCommerce is changing the way businesses operate
- ✦ Why eCommerce is critical to your business
- ✦ A preview of the challenges in implementing eCommerce strategies

You're attending this course because you know that it's time to think strategically about eCommerce. The initial Internet euphoria produced a number of interesting outcomes. Because it was new and exciting, it was an easy sell. Going beyond brochureware, however, requires a major investment in time, strategy, people, and dollars.

The Internet is not simply a new technology that businesses are adopting to reduce their costs of operations and increase revenues. It is literally transforming the way businesses work. Your customers, partners, suppliers and employees demand unparalleled levels of service, collaboration and communications. You must adopt a purposeful eCommerce strategy for your own business to achieve a sustained competitive advantage.

Although you may have begun your Internet initiatives with such tools as a corporate web site, you need to set priorities for your business and integrate your strategies for communicating and selling not only to potential customers who are typically addressed by your corporate page; but also to strategic customers, partners and suppliers; and to your employees.



In this overview, you will learn what eCommerce is and how it is being used by best practice companies to improve the way they do business. You will gain an understanding of why eCommerce is changing the way businesses operate and how it is shaping new business services and processes. You will also receive a preview of the challenges and issues involved in planning and implementing an eCommerce strategy.

## eCommerce - A Definition

eCommerce is the use of internetworked computers to create and transform business relationships. Applications provide business solutions that improve the quality of goods and services, increase the speed of service delivery, and reduce the cost of business operations. It's a new methodology of doing business in three focal areas:

- Business-to-business
- Business-to-consumer
- Intra-business

It is most commonly associated with buying and selling information, products, and services via the Internet, but it is also used to transfer and share information within organizations through intranets to improve decision-making and eliminate duplication of effort. The new paradigm of eCommerce is built not just on transactions but on building, sustaining and improving relationships, both existing and potential.

## eCommerce has evolved

EDI (electronic data interchange) has an established history as a way of doing businesses between companies electronically, but it was expensive, closed, proprietary and available only to the very largest of companies.

eCommerce is a new way of doing business, available to companies of all sizes, to create new relationships and extensions to existing business built on relationships, networks and webs of activities. eCommerce levels the playing field for any organization that chooses to participate, small or large.

The old electronic technology and media were broadcast, passive and oppressive. The new Web technology and media is richer, more empowering, and interactive.

It is difficult to comprehend the speed of change in the development of Internet and web technology. The World Wide Web is barely 4 years old. The term "Internet years" is often used to describe the quick increments of change in this environment. Expect more changes and the facility to embrace them in your business.



## Evolution of eCommerce - Sabre

### 1930's

American Airlines' first pioneering effort with reservations was the "request and reply" system used in the 1930s. A reservations agent would telephone the central control point where inventory was maintained to inquire about space available on a flight, and a response would be returned via teletype.

### 1940's

Through the mid-1940s reservations were recorded manually with a pencil on different colored index cards, nicknamed "Tiffany" cards after the lamps with the colored glass shades. These cards were arranged in a "Lazy Susan," and flights were controlled by half a dozen employees sitting around a table spinning the lazy Susan for index cards that would correspond to particular flights. By counting the pencil marks on each card, a clerk at the reservations center could give a "yes" or "no" to a request for a seat. In some reservations offices, a wall-sized status board was installed to display seat space available on each flight. The board summarized much of the information on the index cards in the lazy Susan. As new reservations came in, workers at the table passed the information to board workers who removed seats from a particular flight until no seats remained. Using the Tiffany system to complete a booking for a round-trip reservation from New York City to Buffalo required 12 different people performing more than a dozen separate steps during a three-hour period - longer than the flight itself! American developed the industry's first electrical/mechanical device for controlling seat inventory in 1946. It was called the Availability Reservisor, and it applied basic computer file technology to the task of tracking American's seats and flights. Even though it couldn't sell the seat or cancel a reservation, the system represented a milestone in adapting electronics to airline reservations.

### 1950's

By 1952, the airline had added basic computer file technology - a random access memory drum and arithmetic capabilities to the Reservisor. With the Magnetronic Reservisor a reservations agent could check seat availability and automatically sell or cancel seats on the electronic drum. As advanced as this was for its time, the airline reservations process was still intensely manual. In 1953, a chance meeting of two Mr. Smiths on an American Airlines, Los Angeles-New York flight resulted in the development of a data processing system that would create a complete reservation and make all the data available to any location throughout American's system. The outcome of the conversation between C.R. Smith, American Airlines' president, and R. Blair Smith, a senior sales representative for IBM, was the 1959 announcement of a Semi-Automated Business Research Environment - better known today as SABRE. American's initial research, development and installation investment in this system was almost \$40 million -- the price of four Boeing 707s at the time!



### 1960's

By 1964, the telecommunications network of the SABRE system extended from coast to coast and from Canada to Mexico. It was the largest real-time data processing system - second only to the U.S. government's SAGE system.

### 1970's

In May 1976, American installed its first SABRE unit in a travel agency. By the end of the decade, SABRE had more than 1,000 travel agency customers. Today, more than 300,000 devices in 74 countries on six continents are connected to SABRE.

### 1980's & 1990's

What began as a system for American Airlines to keep track of seats sold on its flights has evolved into an electronic travel supermarket used by travel professionals, corporations and consumers worldwide to book airline, car and hotel reservations as well as to order theater tickets, bon voyage gifts, flowers and other travel-related goods and services. The introduction of easySABRE in 1985 allowed personal computer users to tap into SABRE to access air, hotel and car reservations. Through SABRE - the recognized leader in the travel industry - an estimated \$45 billion in travel products is booked each year. SABRE has evolved into the world's largest privately-owned real-time computer network and has processed a record high 4,176 messages per second. In 1995 SABRE helped develop Travelocity allowing ticket purchase and flight information via the Web.

## A Brief eCommerce History

### Communication

Phase 1    ftp; gopher; news    File transfer; communication to academic and computer enthusiasts

### One-way marketing

Phase 2    Mosaic    Simple World Wide Web vanity pages for market information dissemination; basic customer service

### Customer interaction

Phase 3    World Wide Web    Simple transactions; basic communication to/from company

### Organization and process transformation

Phase 4    Transformation of business processes and new lines of business



## Trends and Factors of New Economy

There are several trends and factors that are instrumental in shaping the current and future of eCommerce. They include:

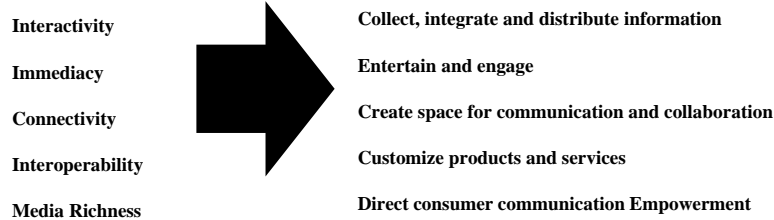
- **Economy:** Organizations in the past were large, slow, pyramidal and produced widgets. Power was based on who controlled capital. Today we are moving toward a knowledge economy where creation and dissemination of knowledge is the means to control. New organizations are flexible, dynamic and dramatically lower in land, labor and capital requirements. It's the quality and productivity, rather than the volume, of workers that define the new economy.
- **Politics:** The politically powerful controlled the means to production. Democracy was mitigated by economics. Information was top-down, tightly controlled, and slow moving. We are moving into a new information and knowledge is more accessible; and the creation of knowledge and constant learning is made easier, empowerment is made more tenable (although not a given).
- **Culture:** Dual income households, increased workloads; and commute time had a detrimental effect on culture and the quality of life. New workplace designs and telecommuting afford more time for leisure and family. Culture is based less on capital attainment and more on knowledge acquisition.
- **Technology:** Early technology implementation devalued workers as it was used to replace people and to reduce costs. Though workers still are somewhat alienated by technology, emerging technology can bring people closer to their work and provide them with new skills. Emerging technology characteristics include:
  - ⇒ creation of virtual spaces
  - ⇒ interactivity of work;
  - ⇒ disintermediation, providing direct communication
  - ⇒ immediacy of information to conduct work and make decisions
  - ⇒ richness/bandwidth to exploit the potential of multimedia for work
  - ⇒ accessibility of information both just-in-time (pull) and broadcast (push)



## The New Opportunities

As we begin to explore how your business can exploit the potential of eCommerce, it's important to gain a perspective of the kinds of business opportunities that exist.

### Internet Opportunities



# Why eCommerce is Changing the Way Businesses Operate

eCommerce provides a widely adopted and popularly embraced technology platform that is making the business management trends of the 90's possible to implement. While the trends started in the late '80's, they are now being realized and transformed by this enabling technology.

eCommerce facilitates the current reengineering of business processes which is widespread in most large companies. The goals of eCommerce are similar to the goals of reengineering:

- reduced costs
- lower product cycle times
- faster customer response
- improved service quality

Reengineering efforts, however, tend to ignore the social costs that accompany radical organizational change. The community-centered values associated with Internet technologies suggest that eCommerce, when done properly, encourages positive work arrangements and empowerment.



## New Generation Business Values

- Be vision driven, not application-driven
- Relish Failure
- Experiment, experiment, experiment
- Revisit your strategic direction every 6 months
- If it ain't broke, break it!
- Be "customer centric"
- Display functional paranoia
- Empowerment

# How eCommerce is Changing the Way Businesses Operate

Traditional organizations were responsible from end-to-end. Developing, manufacturing, selling, shipping, and supporting products required tremendous resources that were not necessarily the core competencies of the organization. Responsibilities were fragmented and grew into stovepipes.

eCommerce has begun to transform the business operation into a networked environment of virtual organizations, where each can focus on its own core competence to deliver a whole product solution to the customer base.

eCommerce is instrumental in creating and enabling a number of new ways of doing work:

- Workflow systems
- Video conferencing;
- Multicasting information
- Training
- Financial interactions
- New electronic-based relationships between companies.



- New economics of make/buy
- New modes of marketing
- Information search and packaging
- Collaboration
- New and cheaper channels
- New business combinations
- Support for alternative work lives

## New Customer Relationships

Perhaps most importantly in how eCommerce is changing businesses is a new way of doing business with customers. It facilitates new types of information-based business processes for reaching and interacting with customers:

- on-line advertising and marketing,
- on-line order taking,
- on-line customer service.
- customized products and services

## Supply Chain Management

eCommerce also reduces the cost of purchasing and inventory management with more direct, efficient interaction with a wide range of suppliers and trading partners. Businesses are reinventing value-added distribution services with business-to-business applications.

## New Products on the Net

The business of the Internet is information. Established publishing companies such as the Wall Street Journal are literally reinventing their offerings with an interactive edition that can be customized by the reader. New entrants to the market, such as BusinessTech, are publishing directly on the web. Information-based products can also entertain – with offerings such as interactive games and the targeted video and audio entertainment distribution that a company like Firefly provides.

## Setting Your Priorities for Mission Critical Needs

What are the priorities for your own business? Will it be:





- Improving your business operations with better, more efficient business-to-business applications or employee collaboration?
- Building new markets and gaining bigger, better customers with improved relationships?
- Reinventing your business to create a new revenue stream based on Internet-based products?

These are some of the questions you will need to be asking yourself and your colleagues so that you can create your companies eCommerce strategy

## Why eCommerce is Critical to Your Business

There are three main reasons that eCommerce and the execution of a smart eCommerce strategy is critical to your business:

1. Size and growth of the market.
2. Rapid adoption of eCommerce by your competitors.
3. New players and competitors are increasing because of lower barriers to entry.

### Market Size and Demographics

One of the most contentious Internet issues is the size of the user population. There is continued speculation, in the press and elsewhere, about the accuracy of the research estimates. Despite the wide span of market "guesstimates" on market size, all will agree that the market is big and getting bigger fast.

### Fall 1997 CommerceNet/Nielsen Internet Demographic Survey.

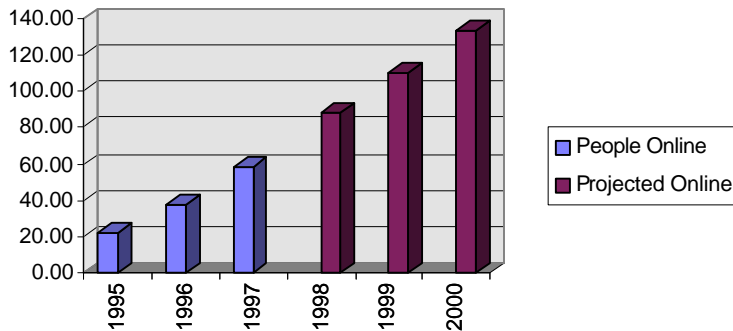
\*Please note that these projections are based on the assumption that the Internet will continue to grow at a rate of approximately 10% per year through the year 2000

### Internet Population Projected Growth in Millions

Date	Internet Population	Projected
1995	22.00	
1996	37.84	
1997	58.00	
1998		87.75
1999		110.25
2000		132.75



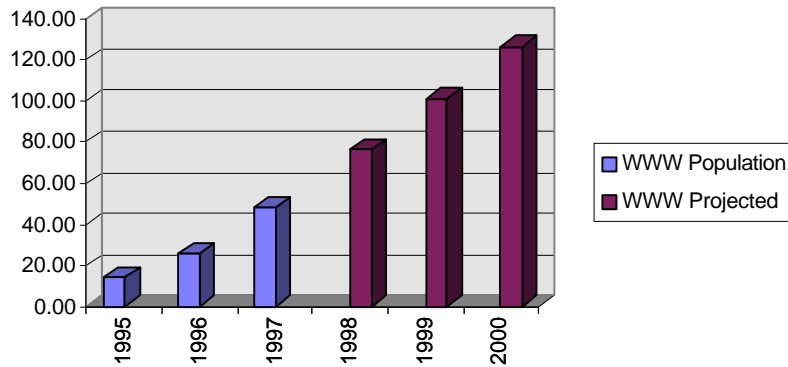
### Internet Population Growth (in Millions)



### World Wide Web Population Projected Growth (in Millions)

Date	WWW Population	Projected
1995	14.30	
1996	25.96	
1997	48.00	
1998		76.50
1999		101.25
2000		126.00

### WWW Population (in Millions)





# Previews of the Challenges in Implementing eCommerce Strategies

There are a number of challenges and opportunities that need to be addressed that could have a direct impact on your implementation strategy to ensure a sustained competitive advantage. They include:

- **Convergence** - how to conduct business when the lines and boundaries blur as technologies, media, and even industries converge. The internetworked, interactive business environment places critical new demands on businesses.
- **Empowerment** - how to allow customers and employees new found convenience and control over activities pertinent to their satisfaction and well-being.
- **Integration** - how to allow work processes and organizational alliances to be facilitated and driven by digital networks bringing about greater efficiencies and markets.
- **Disintermediation** - how to adjust to the removal or transformation of business layers which are responsible for steps in a value chain. Disintermediation is both a threat and an opportunity, which can bring the "producer" and "consumer" closer together. An example of this is Travelocity.
- **Innovation** - how to stay competitive when a surprising number of new products are entering the market that create new forms of competition.
- **Prosumption**- how to involve the customer in the product cycle. The consumer should be embedded into the product creation process; for example, the mass customization made possible by my Yahoo!
- **Immediacy** - how to respond to the consumers immediate needs. Customer expectations now demand immediate response and superior customer service. Federal Express has pioneered a new business paradigm for real-time response.
- **Globalization** - how to address the global market. The eCommerce model defies geographic boundaries and barriers. This is an opportunity but also a tremendous challenge.



## Possible Peril?

These are the dangers. Lest we think our troubles are over, consider the following:

- **Privacy** – how is privacy threatened by digitization and new generation technologies? What policies need to be developed at organizational, industry and societal levels?
- **Employment** - what will happen to the future of work? What skills will become less relevant and valued, and what will become of these people?
- **Equity** – who will be the benefactors of the new era? Who will hold the power?
- **Democracy** – will it thrive or be endangered? Will we be able to better voice our individual preferences and differences?
- **Trust** - how is trust built in this age of disembodied information?
- **Others** - what else is out there, that we have not yet encountered???

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## Summary

You have received an overview of eCommerce, what eCommerce is and how it has evolved. You have also learned why eCommerce is changing the way businesses operate and, more specifically, how it is changing the way they operate. You've gained insights into why eCommerce is critical to your business by reviewing the current size and market trends. You have also discussed the challenges and issues facing you as you plan and implement your eCommerce strategy

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### Something to think about

So far, you have been introduced to the topic of eCommerce. Is your business exploiting the potential? Are you aware of how your competitors are using eCommerce as a strategic tool? What area of your business operation do you believe will benefit the most through eCommerce?