

ACS-1803

# Introduction to Information Systems

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## E-Business, E-Commerce

Lecture Outline 10

# Learning Objectives

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- Explain the differences between extranets and intranets as well as show how organizations utilize these environments
- Describe electronic commerce and how it has evolved
- Describe the strategies that companies are adopting to compete in cyberspace
- Describe the stages of business-to-consumer electronic commerce and the key drivers for the emergence of mobile commerce
- Understand the keys to successful electronic commerce applications
- Understand general eBusiness security fundamentals

# Network Computing Spectrum

- Intranet/ Extranet/ Internet

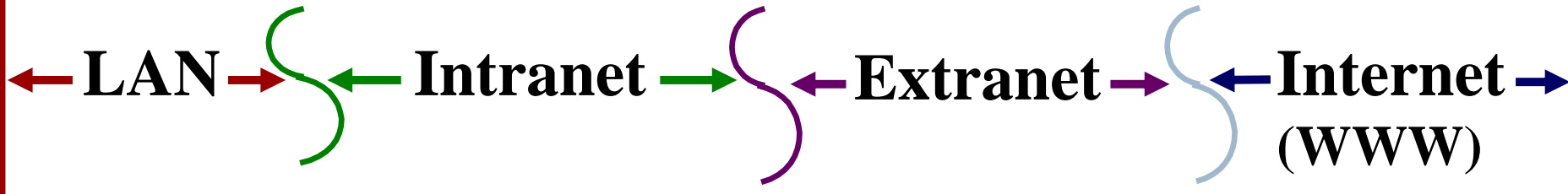
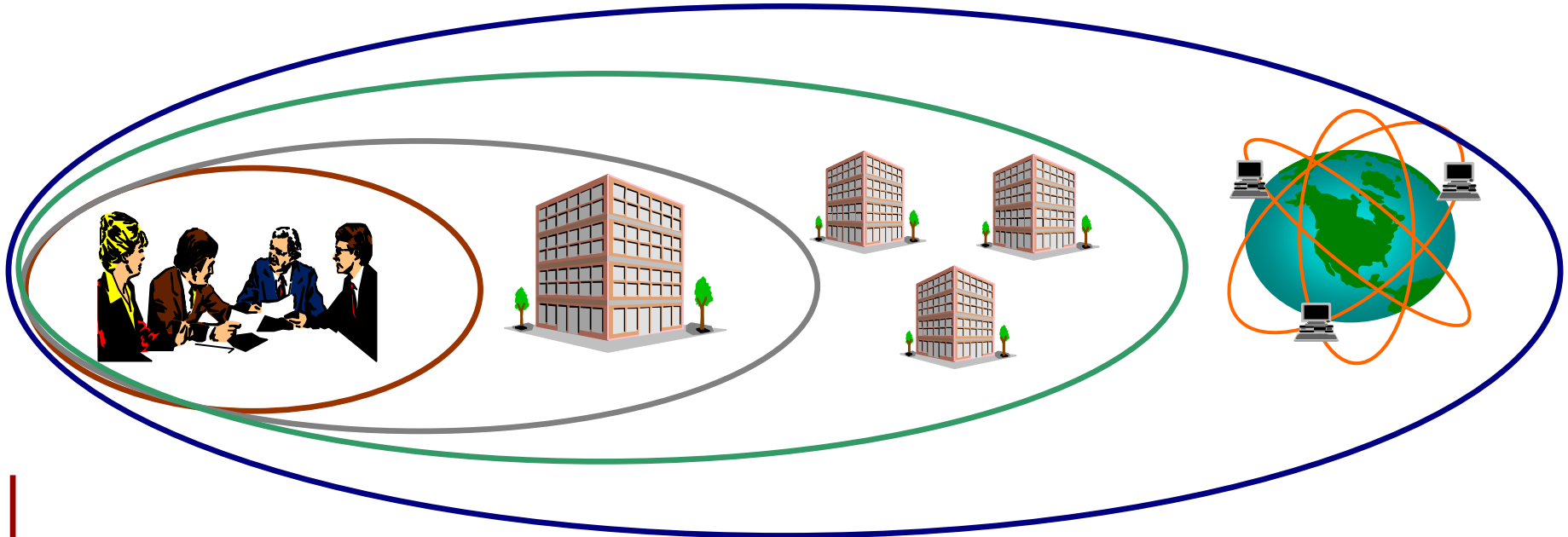
# Network Computing Spectrum

**Team**

**Intra-  
company**

**Inter-  
company**

**Global  
Network**



# Internet and the World Wide Web Capabilities

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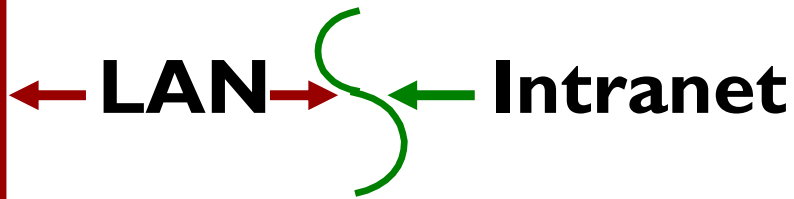
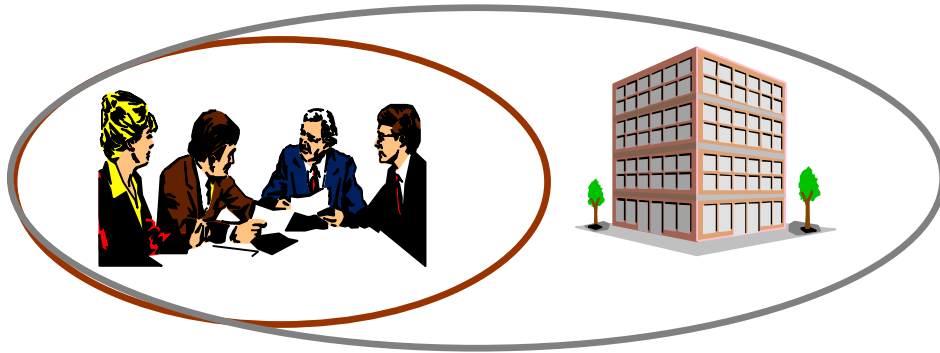
- ▶ **The Internet Changed Everything**
  - ▶ **Intranet** – internal, private network using Web technologies to facilitate transmission of proprietary information within the organization
  - ▶ **Extranet** – two or more firms using the Internet to do business together
  - ▶ **Internet and World Wide Web** created an entirely new communications capability for the emergence of Electronic Business (eBusiness)
  - ▶ **The Internet** opened up access to markets by lowering barriers to entry.

# Network Computing Spectrum

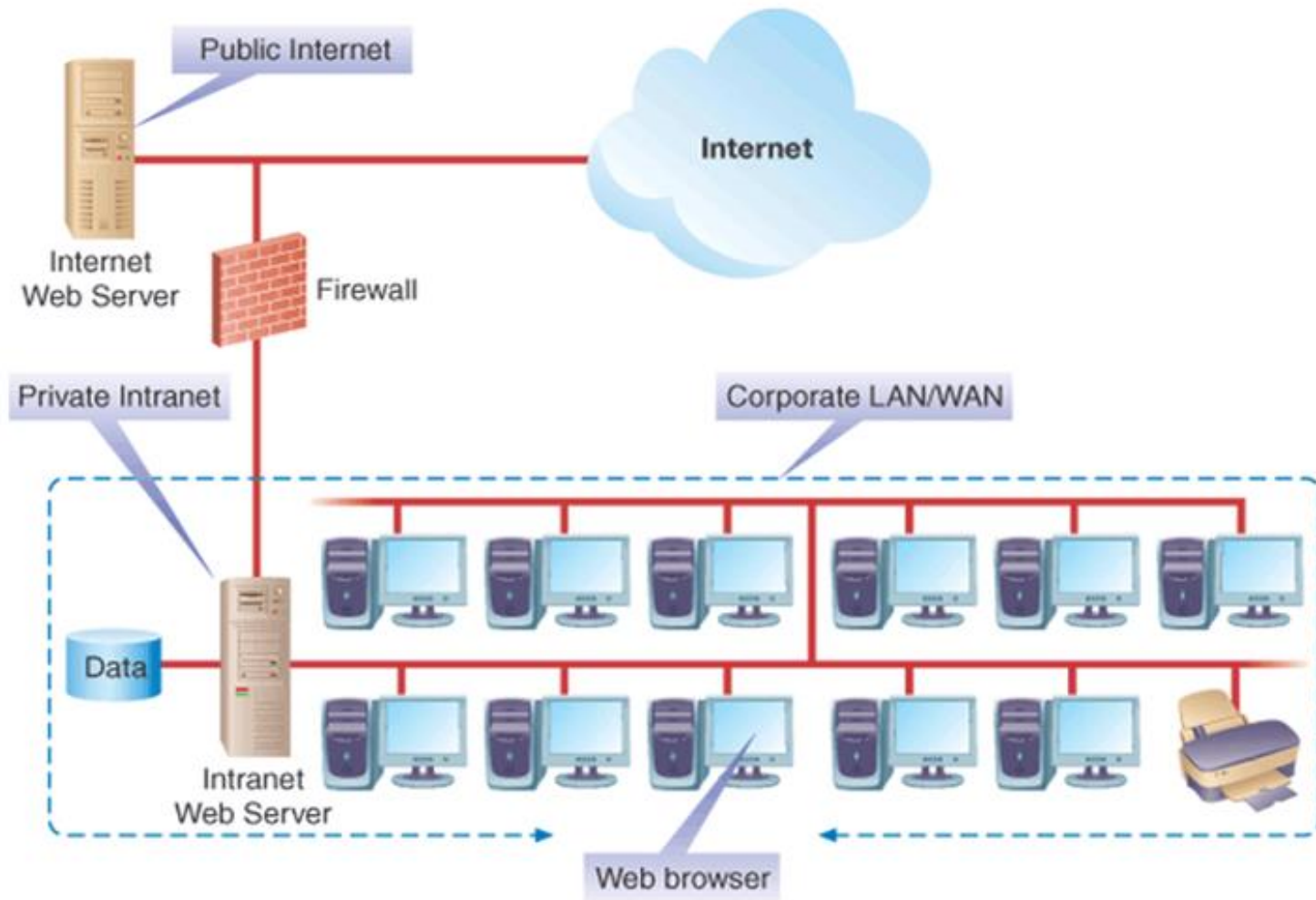
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**Team**

**Intra-  
company**

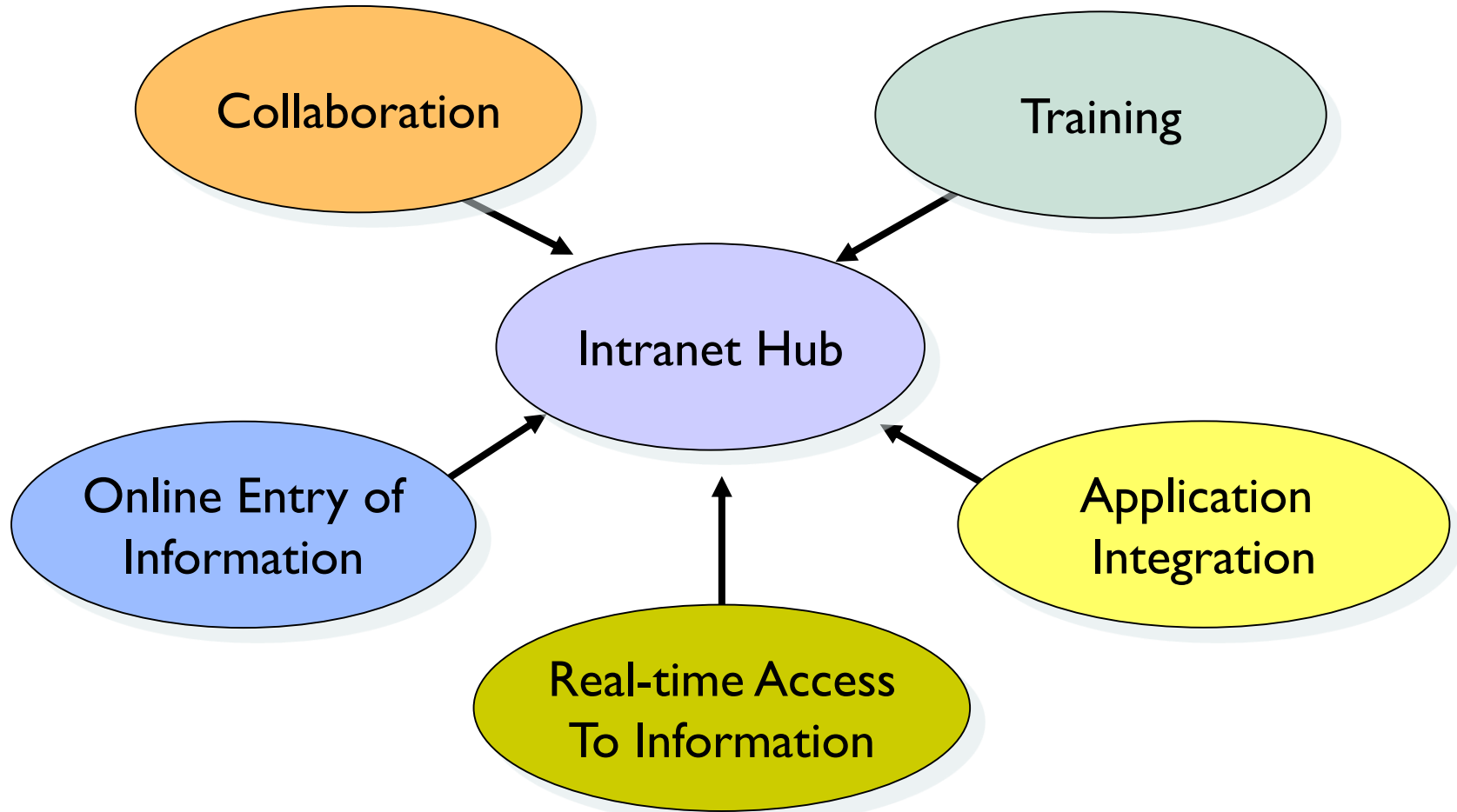


# Intranet Architecture



# Intranet Applications

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# Intranet Applications

## Training

- Provides **online access** to a host of **training functions** including course catalogs, registration, content (video, slides, other materials) and evaluation
- Provides significant **increases in productivity** and **standardization**, and **cost reductions** (e.g. travel costs)

## Application Integration

- Allows for **integration** and **consolidation** of information from disparate systems into a **single point of access**
- **Increases** employee **productivity** and output **quality**

## Real-time Access to Information

- Allows employees access to real-time system information.
- This **reduces customer service needs** by giving all **authorized** and interested **parties** direct system **access**

# Intranet Applications

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## Online Entry of Information

- Allows for **direct** online **input** to **streamline** routine business **processes** (e.g. expense reporting)
- Provides for significant **cost reductions** from reducing administrative **support** and shifting **maintenance** functions back to the **employee (i.e. sick leave applications)**

## Collaboration

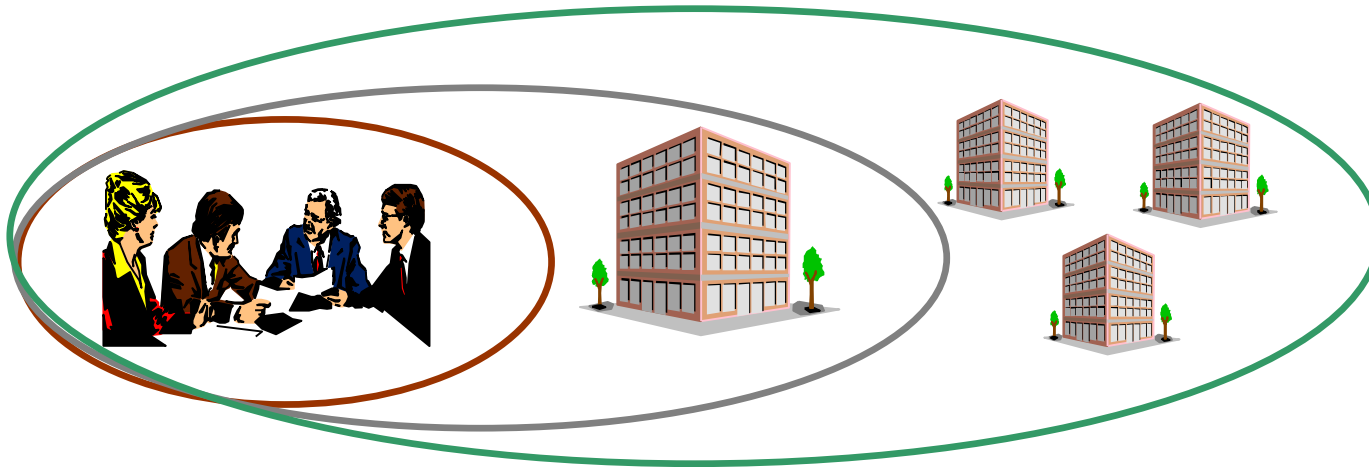
- Allows employees to **communicate** business **activities** across **geographic** and **departmental boundaries**
- Allows for **shorter** development **cycle times**
- Allows employees to stay abreast of current projects, corporate, and market conditions

# Network Computing Spectrum

**Team**

**Intra-  
company**

**Inter-  
company**



# Extranets

## Extranets

- Extranets are **secure** network architectures that provide customers, suppliers, and employees with access to **internal** systems.
- **Extranets** enable two or more firms to use the Internet to do business together.
- They are an excellent use of **B2B** to allow companies to achieve a positive return on their tech investments.

## Extranet Benefits

- Improves **timeliness** and **accuracy** of communications, thereby reducing **errors** and **misunderstandings**
- Uses Electronic Data Interchange (EDI) as the standard **protocol** for allowing disparate computing platforms to **communicate** without additional investments in the application systems.
- Easy to use, requires little training
- Used to **automate** transactions, reducing cost and cycle time

# Electronic Data Interchange (EDI)

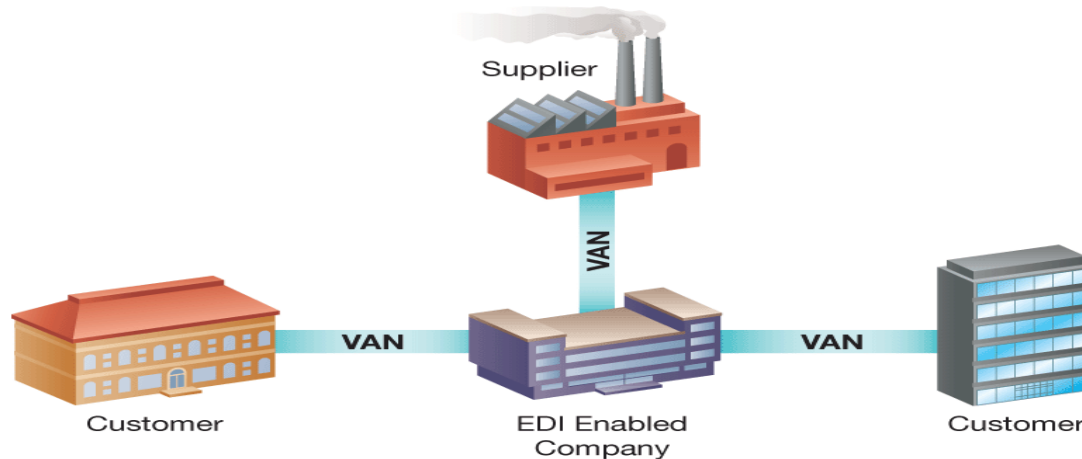
## Electronic Data Interchange

- The **transmission** of electronic business **forms** between business **partners** (e.g. purchase order)
- Typically used by large organizations via VAN...**very expensive**
- The internet (VPN) has opened this technology to **smaller firms**
- **Utilizes universal standard transmission protocols to communicate and transmit data between different systems.**

## How it works

- EDI transactions are supported by two types of network methods:
  1. **VAN (Value Added Network)**
  2. **VPN (Virtual Private Network)**

# Value Added Network (VAN)

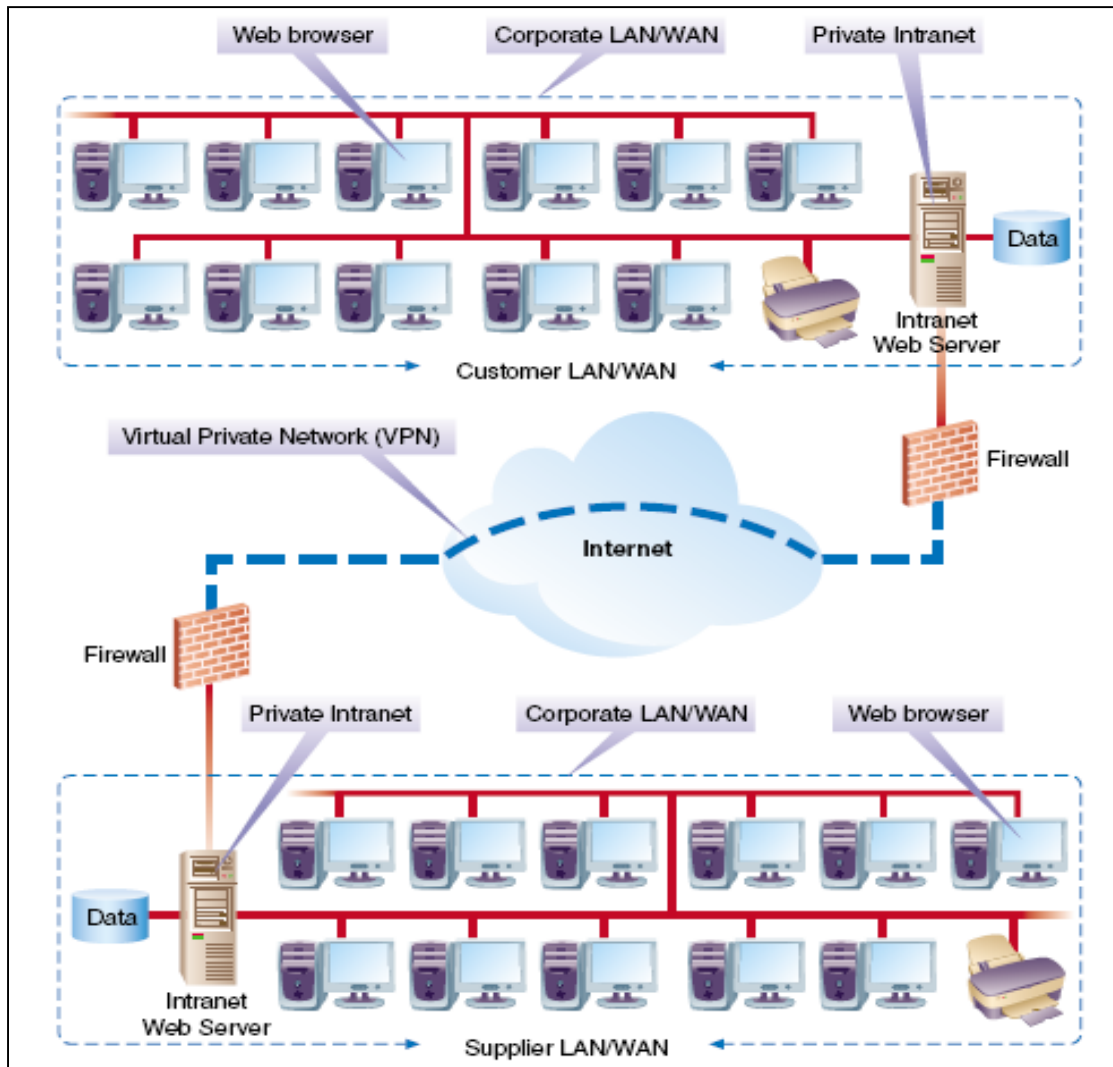


**Figure 5.13** A typical EDI system architecture.

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- **VAN (Value Added Network)** providers are private network operators that provide guaranteed delivery. The VAN is responsible for routing, storing and delivering EDI messages. They also provide delivery reports. VANs may be operated by various entities:
  - telecom companies;
  - industry group consortia;
  - a large company interacting with its suppliers/vendors.

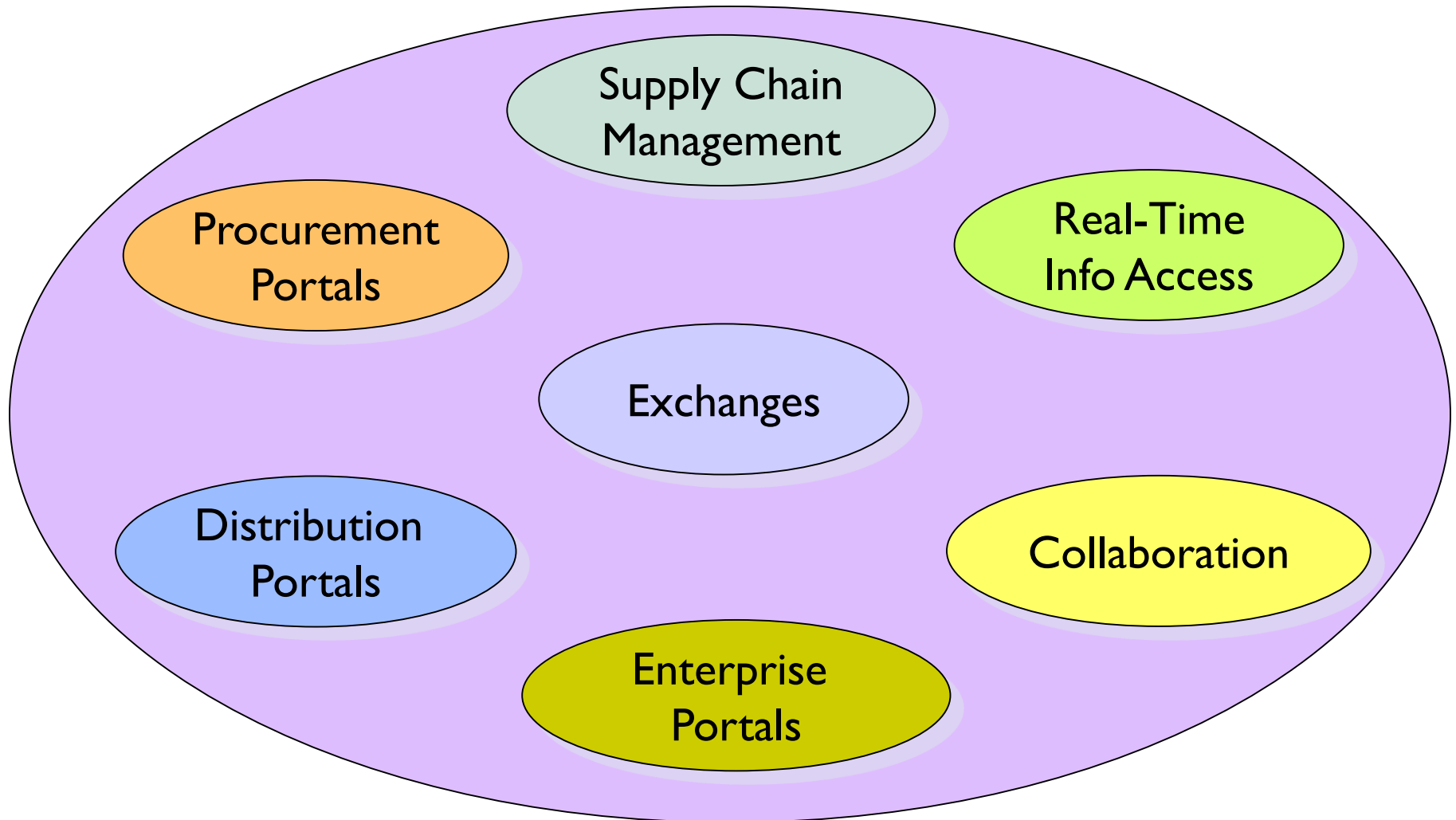
# Virtual Private Network (VPN)



## Virtual Private Network

- (VPN) is a **secure** network technique to protect extranet communications over an IP network
- Uses a technique called **tunneling** to **encapsulate, encrypt, and transmit** data over the Internet
- Requires server **authentication** (verify user with password) to allow operation
- May be managed as a fully integrated, end-to-end dedicated private network.
- Similar to a VAN – utilizes the IP network backbone and is a more cost-effective option.

# Extranet Applications





# Extranet Applications

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## Supply Chain Management

- Used to **exchange** supply and manufacturing **information** between **customers** and **suppliers**
- The extranet contains features allowing participants to **purchase online, check supplier inventory, transfer design** specifications, and **other** business related **tasks**

## Real-time Access to Information

- Allowing business **partners** and **customers** access to **real-time** system **information**
- This **reduces** customer service **needs** by giving all **authorized** and **interested** parties direct system **access**

# Extranet Applications

## Collaboration

- Allows companies to respond proactively to marketplace changes by working directly with suppliers and customers
- Allows for **shorter** development **cycle times**
- Allows for **reorganization** of the **purchasing function** turning buyers into supplier relationship managers

## Enterprise Portals

- These are **access points** (front doors) combined from **multiple extranets** where business partners access secure, **proprietary** company **information**
- This provides a **single point of access** for information that comes from a **variety** of disparate **systems**
- Benefits include **faster access** for business partners, **reduced** maintenance **cost** by reduction in total extranets

eBusiness/ eCommerce  
- B2C, B2B, B2E, C2C

# Electronic Business Defined

## **Electronic Business**

is using electronic information to improve performance, create value and enable new relationships between business and customers

## **Electronic Commerce**

is the marketing, selling and buying of products and services on the Internet

## **Internet Commerce**

is the online exchange of information and services utilizing network technologies

## **Web Commerce**

# Types of Electronic Commerce

Type of EC	Description	Example
<b>Business-to-Consumer</b> (B2C)	Transactions between businesses and their customers	A person buys a book from Amazon.com
<b>Business-to-Business</b> (B2B)	Transactions among businesses	A manufacturer conducts business over the Web with its suppliers
<b>Business-to-Employee</b> (B2E)	Transactions between businesses and their employees	An employee uses the Web to make a change in his/her health benefits
<b>Consumer-to-Consumer</b> (C2C)	Transactions between people not necessarily working together	A person purchases some memorabilia from another person via eBay.com

# E-Commerce Impact to Competitiveness

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- ▶ Enables new products and services
- ▶ Encourages substitute products
- ▶ Lowers barrier to entry
- ▶ Changes balance of power of customers and suppliers
- ▶ Transforms some industries
- ▶ Creates new opportunities for creating new markets, building brands, and large customer bases

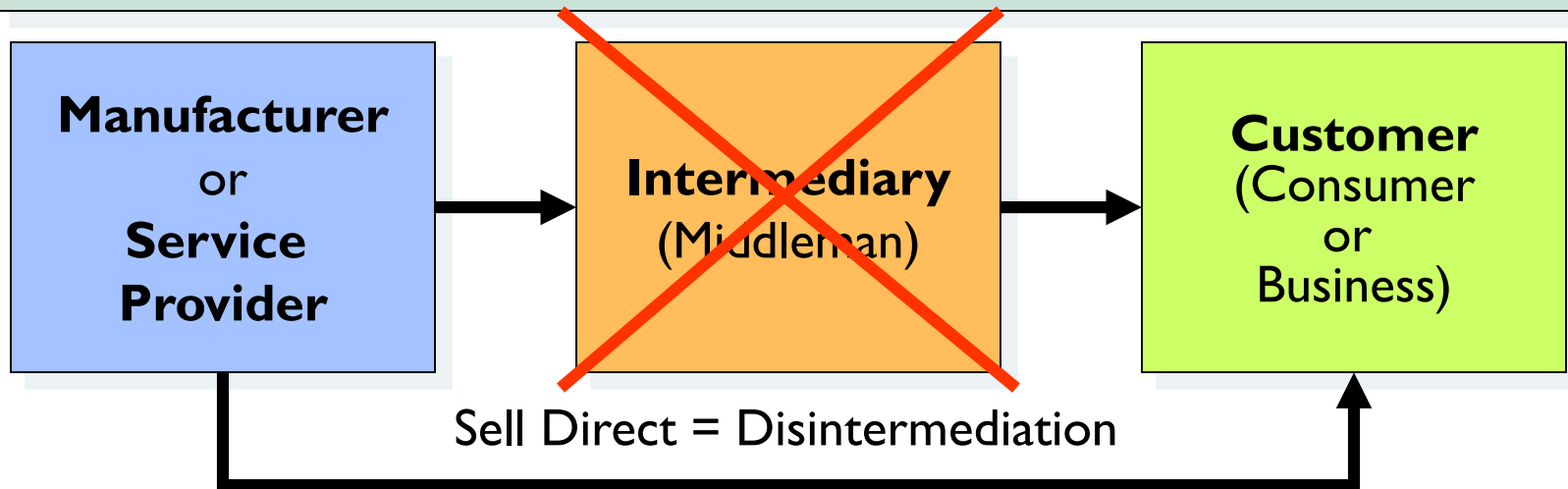
# eBusiness/ eCommerce

## - Strategy and Competitiveness

# Impact of the Web: Disintermediation

## Disintermediation

- Removal of the intermediary (middleman) in a sale.
- Companies can sell directly to customers (retail or wholesale) without assistance using the Internet



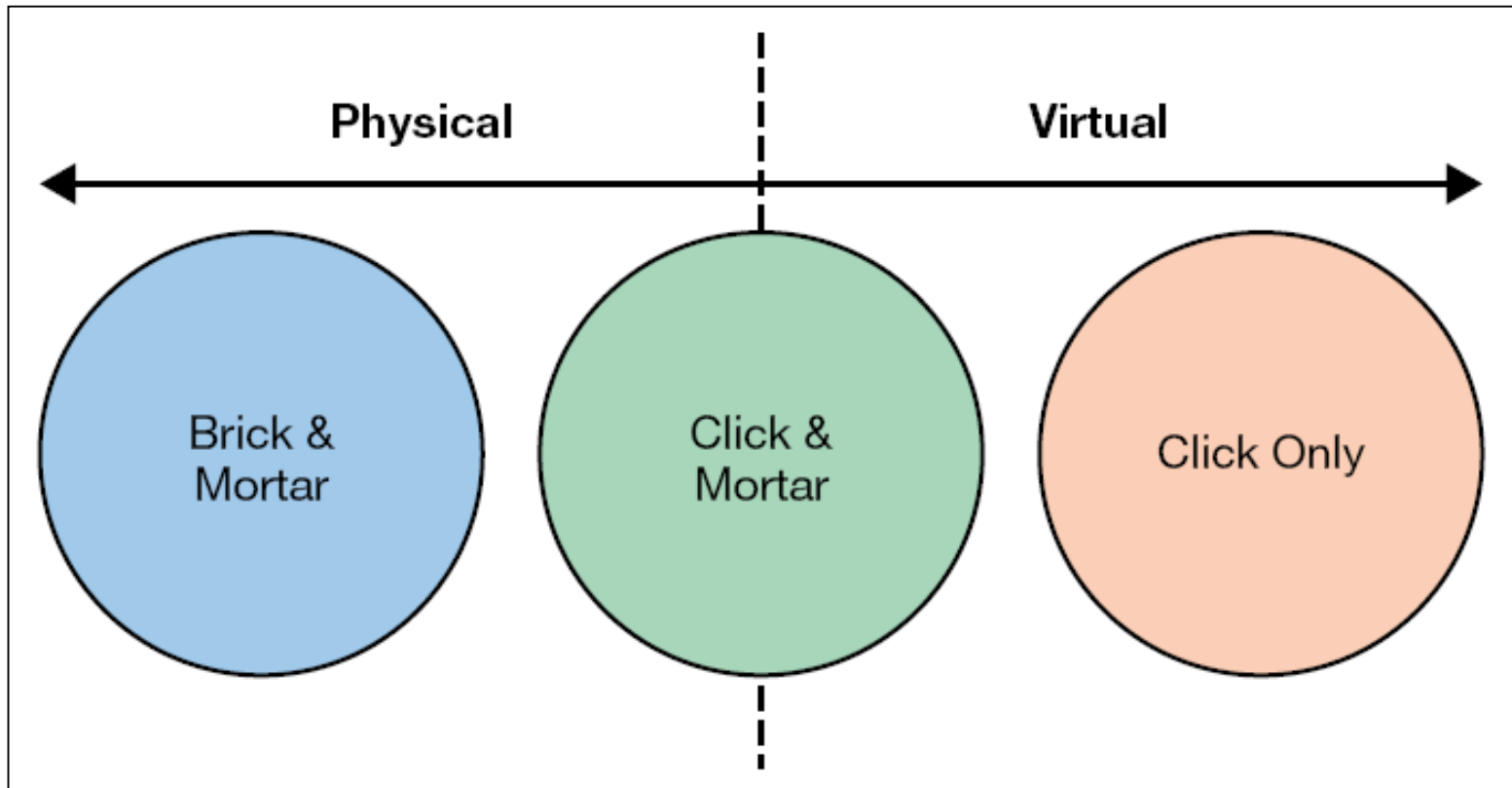
## Example

- Airlines selling directly to flyers without a travel agent or customer service representative



# eCommerce Business Strategies

**Business Strategies** come in one of the following three types. All require a sound business model to be successful (see next)



# Brick-and-Mortar & Click-and-Mortar Strategies

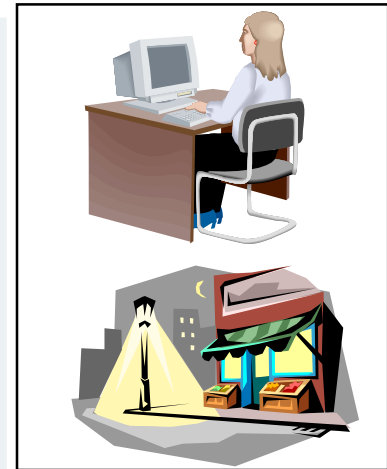


## Brick-and-Mortar

- Operate a firm solely in traditional physical markets
- Approach business activities traditionally by operating physical locations (e.g. stores, offices, manufacturing plants)

## Click-and-Mortar

- Operate a firm in physical locations and has added an EC component to their business
- Requires maximization of business opportunities in both the physical and virtual environments
- This strategy requires a significant investment in systems and space



# Click-Only Strategy



- Business transactions are only conducted virtually
- Can require significant expertise and investment in technology and systems staff
- There are many different revenue models

Revenue Model	Examples	Revenue Source
Advertising	Yahoo.com	Fees from advertisers in exchange for advertisements
Subscription	WSJ.com, Consumerreports.org, Sportsline.com	Fees from subscribers in exchange for access to content or services
Transaction Fee	eBay.com, E-Trade.com	Fees (commissions) for enabling or executing a transaction
Sales	Amazon.com, LLBean.com, Gap.com, Sears.com, JCPenney.com	Sales of goods, information, or services
Affiliate	MyPoints.com	Fees for business referrals

**Table 5.4** Five common revenue models for e-business.

Laudon/Traver, *E-Commerce: Business, Technology, Society*, Table 2.1 (p. 62), Table 2.2 (p. 66), © 2004. Reprinted by permission of Pearson Education, Inc. Publishing as Pearson Addison Wesley.

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# The Mobile Platform (Mobile Commerce)

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- ▶ Most recent development in Internet infrastructure
- ▶ Enables access to the Internet via wireless networks or cell-phone service
- ▶ Mobile devices include
  - ▶ Tablets
  - ▶ Smartphones
  - ▶ Ultra-lightweight laptops

# B2B vs B2C vs MC

FIGURE 1.5

THE RELATIVE SIZE OF DIFFERENT TYPES OF E-COMMERCE

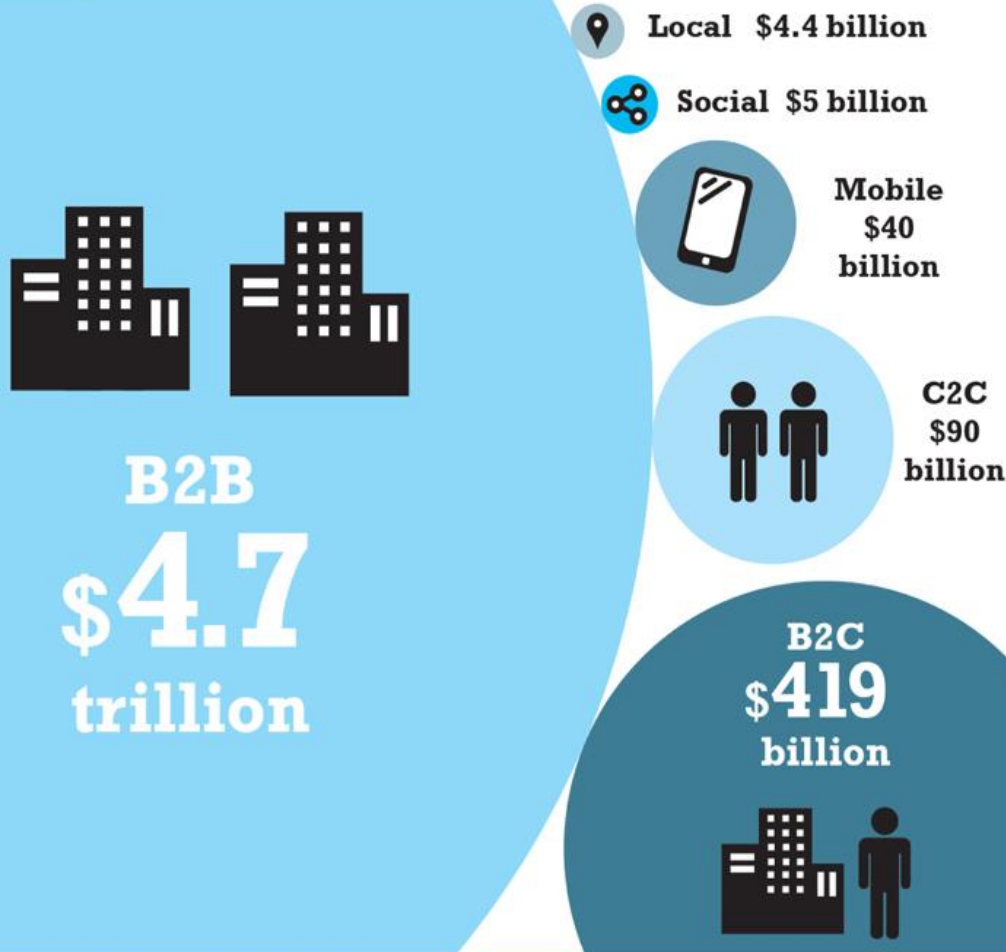
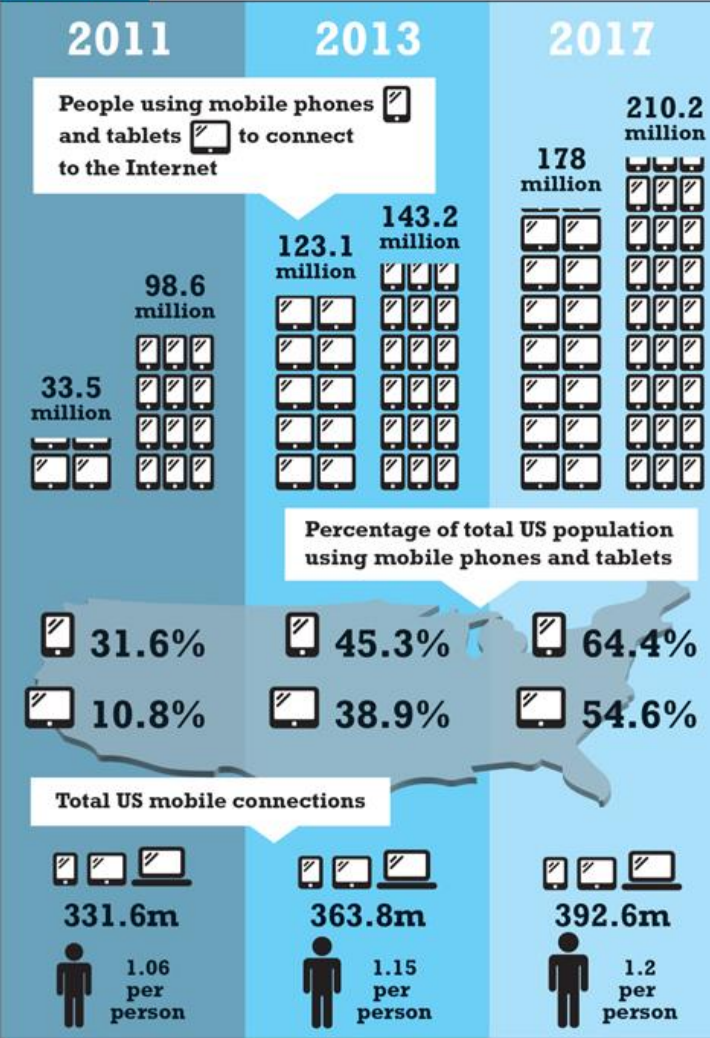


FIGURE 1.6

MOBILE INTERNET ACCESS IN THE UNITED STATES



# The Virtual Enterprise

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- ▶ Uber, the world's largest taxi company, owns no vehicles.
- ▶ Facebook, the world's most popular media owner, creates no content.
- ▶ Alibaba, the most valuable retailer, has no inventory.
- ▶ Airbnb, the world's largest accommodation provider, owns no real estate.

