



# E-commerce

business. technology. society.

*Fourth Edition*

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## Chapter 1

# The Revolution Is Just Beginning



## **MySpace and Facebook: It's All About You Class Discussion**

- What was the idea behind the creation of MySpace?
- How is Facebook different from MySpace?
- Have you used MySpace or Facebook, and if so, how often? What was your experience?
- Do you think these sites will continue to grow?



## **E-commerce Trends: 2007-2008**

- New business models based on social technologies and user-generated content
- Search engine marketing dominates online advertising
- More and more people/businesses use Internet to conduct commerce
- Broadband and wireless Internet access growing
- New digital gadgets such as iPhone that support Internet and phone service
- Podcasting takes off as new media format for distribution of video, radio, and user-generated content
- Continued conflict over copyrights, content regulation, taxation, privacy, Internet fraud and abuse.



## What is E-commerce?

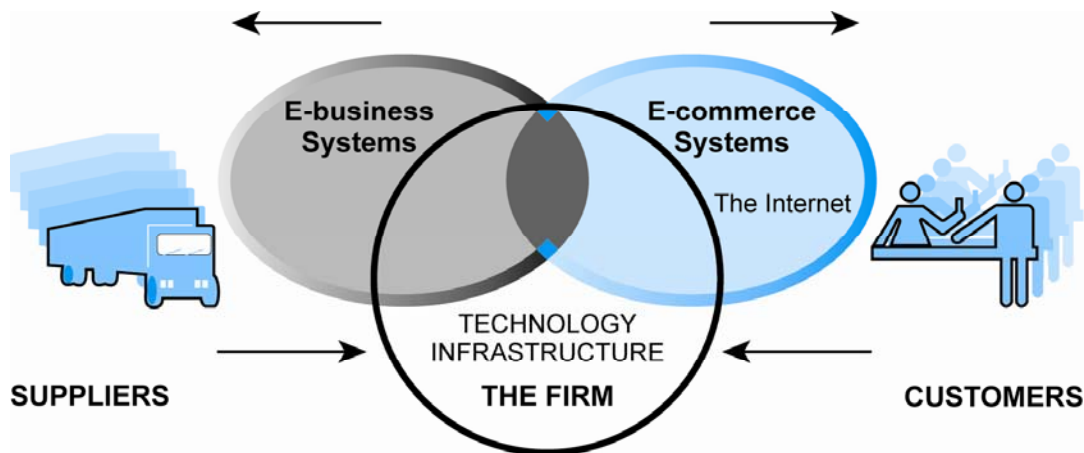
- Involves *digitally enabled commercial transactions* between and among organizations and individuals
  - *Digitally enabled transactions* include all transactions mediated by digital technology, e.g., over the Internet and the Web
  - *Commercial transactions* involve the exchange of value (money) across organizational or individual boundaries in return for products or services



## E-commerce vs. E-business

- E-business:
  - Digital enablement of transactions and processes within a firm, involving information systems under firm's control
  - Does not include commercial transactions involving an exchange of value across organizational boundaries, e.g., a firm's internal inventory control mechanisms do not generate revenue for it from outside businesses or customers
  - However, a firm's e-business infrastructure provides support for on-line e-commerce exchanges

# The Difference Between E-Commerce and E-Business



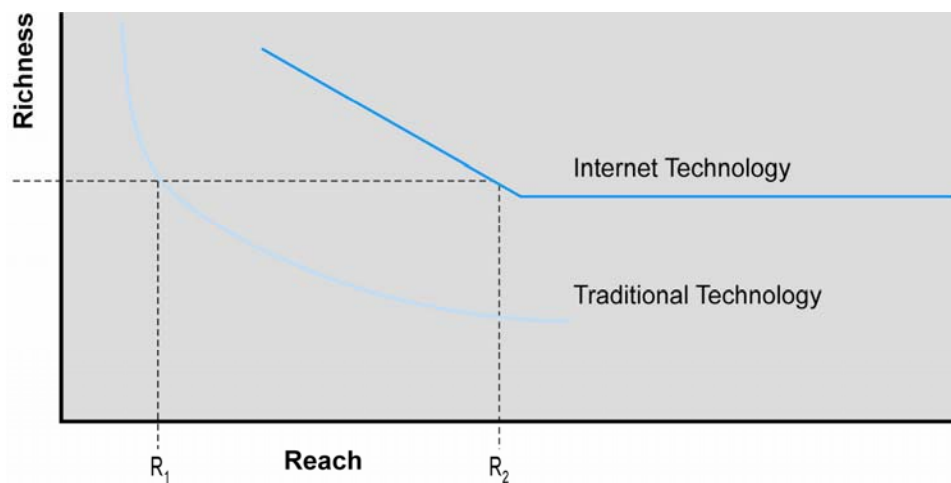
## Why Study E-commerce?

- E-commerce technology is different and more powerful than any other technologies
- Has challenged much traditional business thinking
- Has a number of unique features that help explain why we have so much interest in e-commerce

## Unique Features of E-commerce Technology

- Ubiquitous – Internet available everywhere
- Global reach
- Universal standards – Internet standards
- Information richness – video, audio, text messages
- Interactive
- Information density – storage, communication costs drop, while concurrency, accuracy, and timeliness improve greatly
- Personalization/customization – allows personalized messages delivery to individuals and groups
- Social technology – user content generation and social networking

## The Changing Trade-Off Between Richness and Rich





## Web 2.0

- The “new” Web
- Applications and technologies that allow users to:
  - create, edit, and distribute content
  - share preferences, bookmarks, and online personas
  - participate in virtual lives
- Examples
  - YouTube, Photobucket, Flickr
  - MySpace, Facebook, LinkedIn
  - Second Life
  - Wikipedia



## Types of E-commerce

- Classified by nature of market relationship
  - Business-to-Consumer (B2C)
  - Business-to-Business (B2B)
  - Consumer-to-Consumer (C2C)
- Classified by type of technology used
  - Peer-to-Peer (P2P)
  - Mobile commerce (M-commerce)

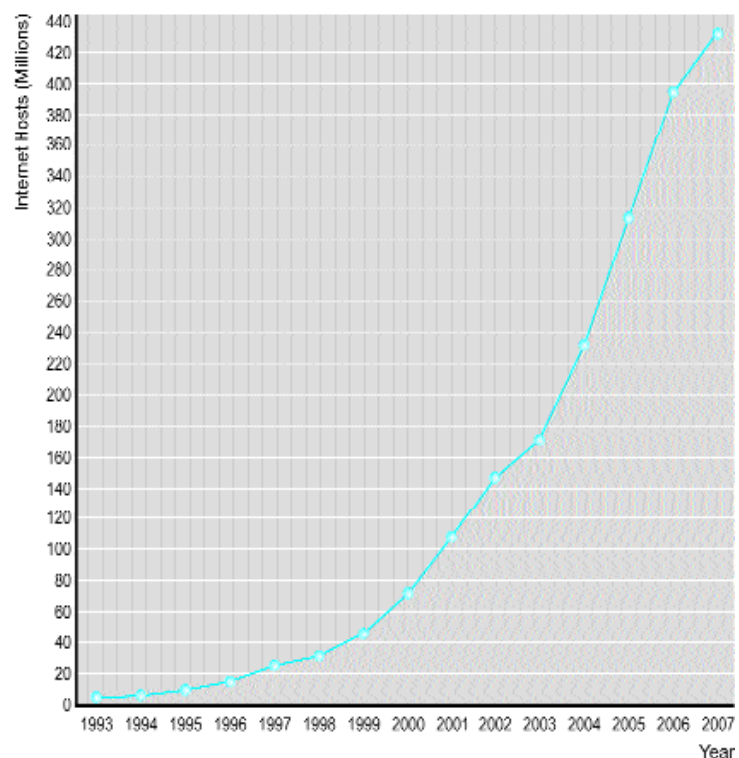


# The Internet

- Worldwide network of computer networks built on common standards
  - Created in late 1960s
  - Services include the Web, e-mail, file transfers, etc.
  - Can measure growth by looking at number of Internet hosts with domain names

## The Growth of the Internet, Measured by Number of Internet Hosts with Domain Names

Figure 1.3, Page 23



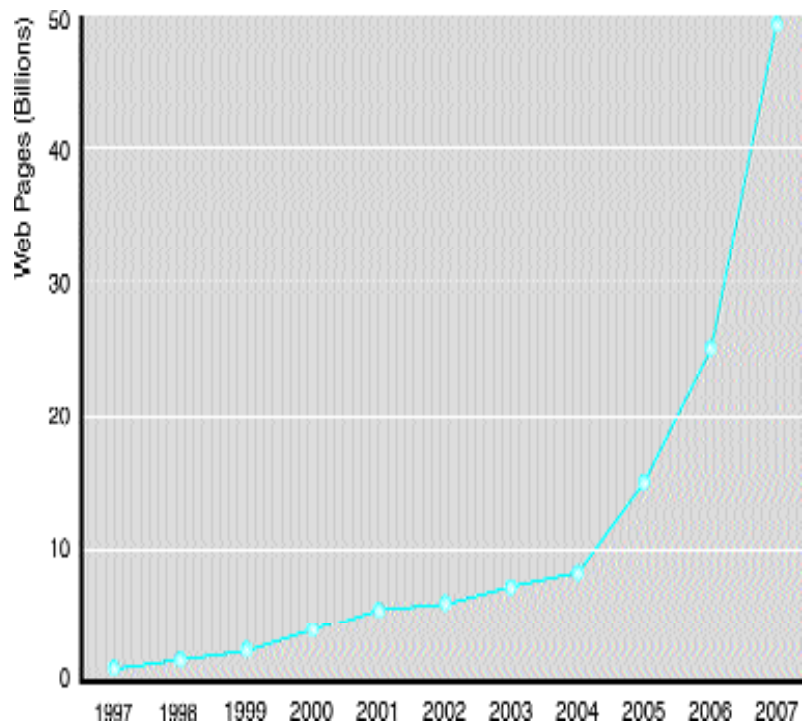
SOURCE: Internet Systems Consortium, Inc. ([www.isoc.org](http://www.isoc.org)), 2007.

# The Web

- The most popular service on the Internet
  - Developed in early 1990s
  - Provides access to Web pages (HTML documents)
  - Can include text, graphics, animations, music, videos
  - Web content in form of Web pages has grown exponentially, from over 2 billion pages in 2000 to over 50 billion pages in 2007

## The Growth of Web Content

Figure 1.4, Page 24



SOURCE: Based on data from Google Inc., 2007.

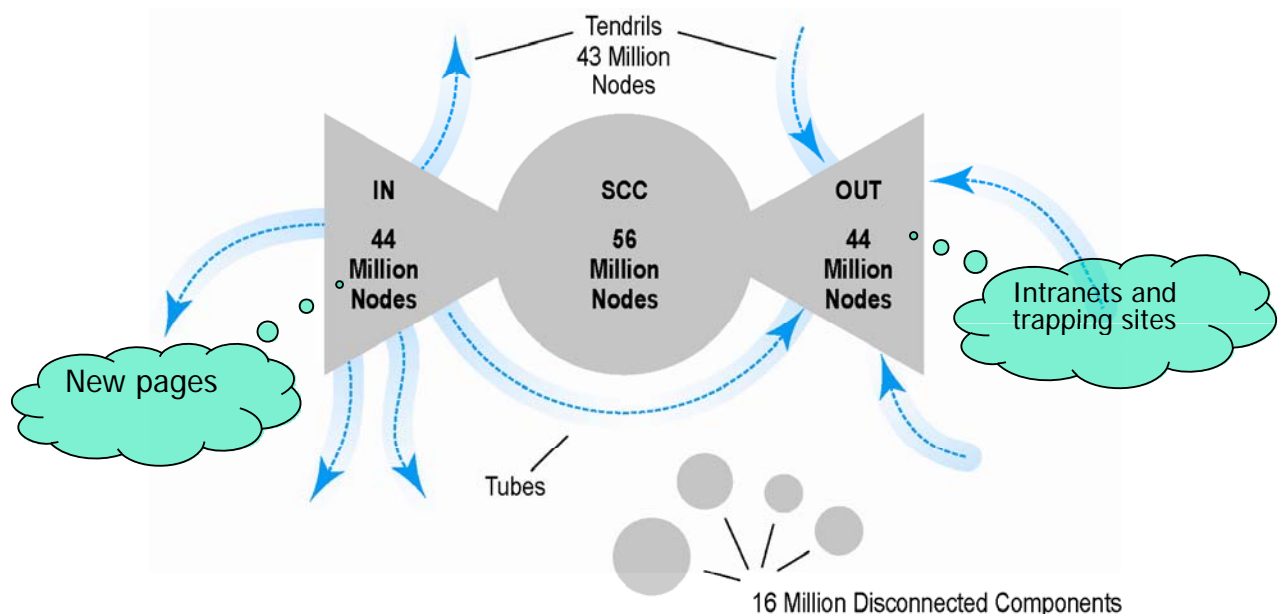


# Insight on Technology: Spider Webs, Bow Ties, Scale-Free Networks, and the Deep Web

## Class Discussion

- What is the “small world” theory of the Web?
- What is the significance of the “bow-tie” form of the Web?
- Why does Barabasi call the Web a “scale-free network” with “very connected super nodes”?

## The Bow-Tie Web

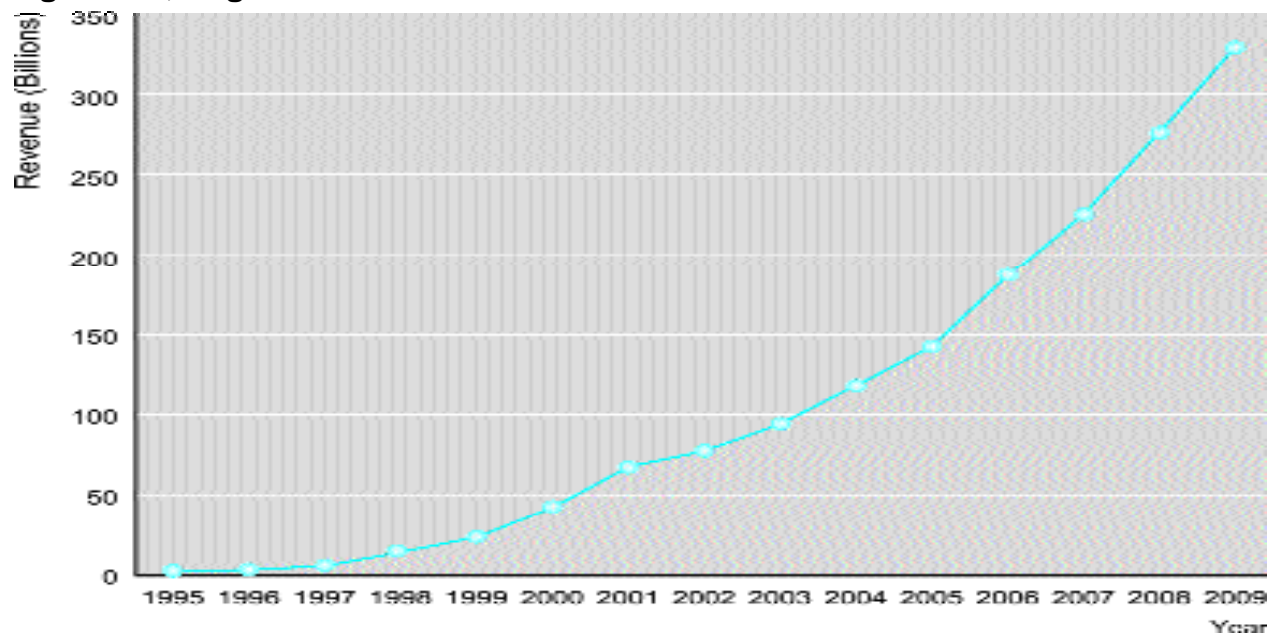


# Origins and Growth of E-commerce

- Precursors include
  - Baxter Healthcare
  - Electronic Data Interchange (EDI) } B2B
  - French Minitel (1980s videotext system) → B2C
- None of precursor systems had the functionality of the Internet
- We date the beginning of e-commerce to 1995
- Since then, has been fastest growing form of commerce in U.S.

## The Growth of B2C E-commerce

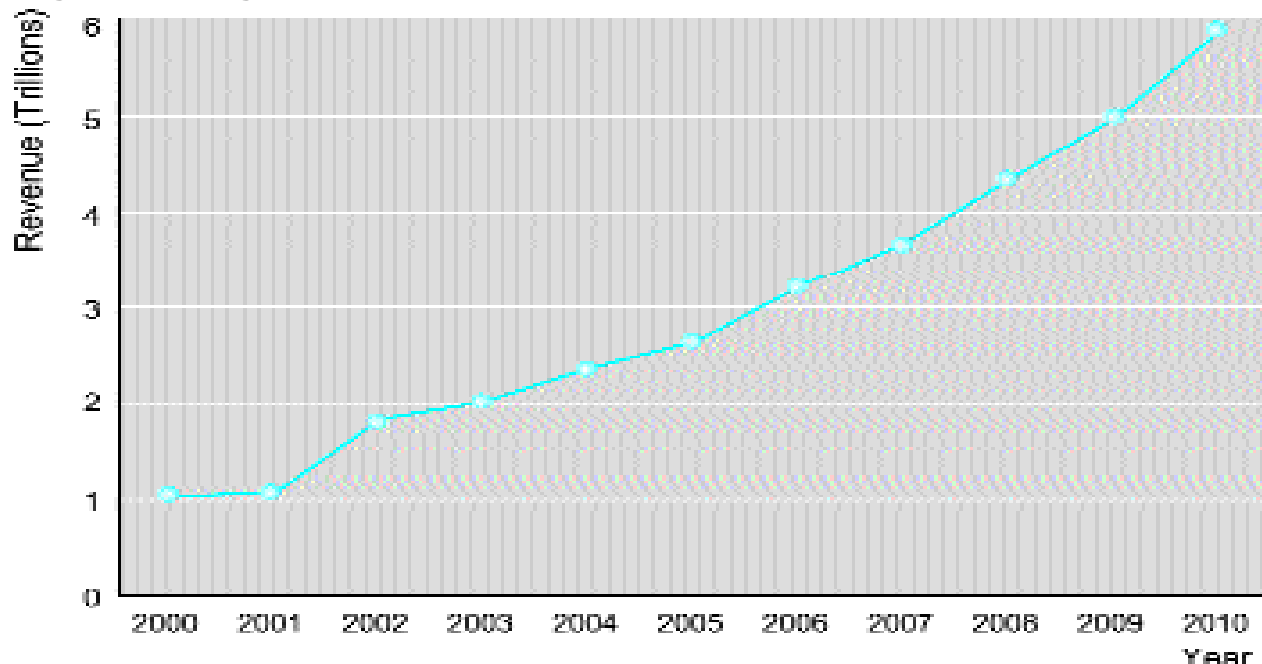
Figure 1.5, Page 25



SOURCES: Based on data from eMarketer, Inc., 2007a; U.S. Census Bureau, 2007; Forrester Research, 2007a; authors' estimates.

# The Growth of B2B E-commerce

Figure 1.6, Page 28



SOURCES: Based on data from U.S. Census Bureau, 2007; authors' estimates.

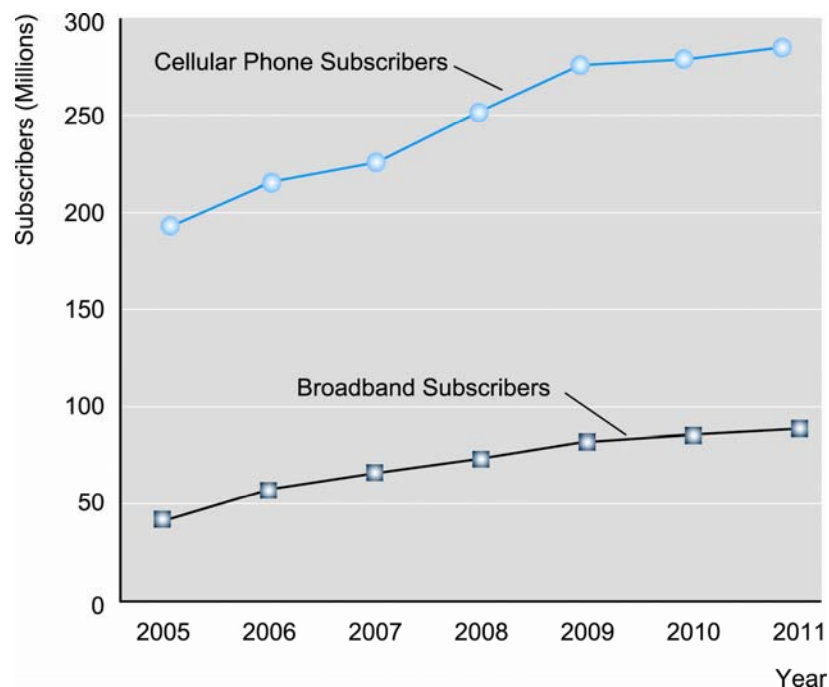
## Technology and E-commerce in Perspective

- The Internet and Web are just two of a long list of technologies, such as automobiles and radio, that have followed a similar historical path; having explosive early growth followed by painful cutback, and leaving just long-term successful larger established firms
- Although e-commerce has grown explosively, eventually its growth will cap as it confronts its own fundamental limitations; all of B2C e-commerce in 2009 will equal annual revenue of Wal-Mart.
- However, still tremendous upside potential given current only 5% of all retail sales revenue being generated online

## Potential Limitations on the Growth of B2C E-commerce

- Expensive technology
- Complex software interface
- Sophisticated skill set
- Persistent cultural attraction of physical markets and traditional shopping experiences
- Persistent global inequality limiting access to telephones and computers

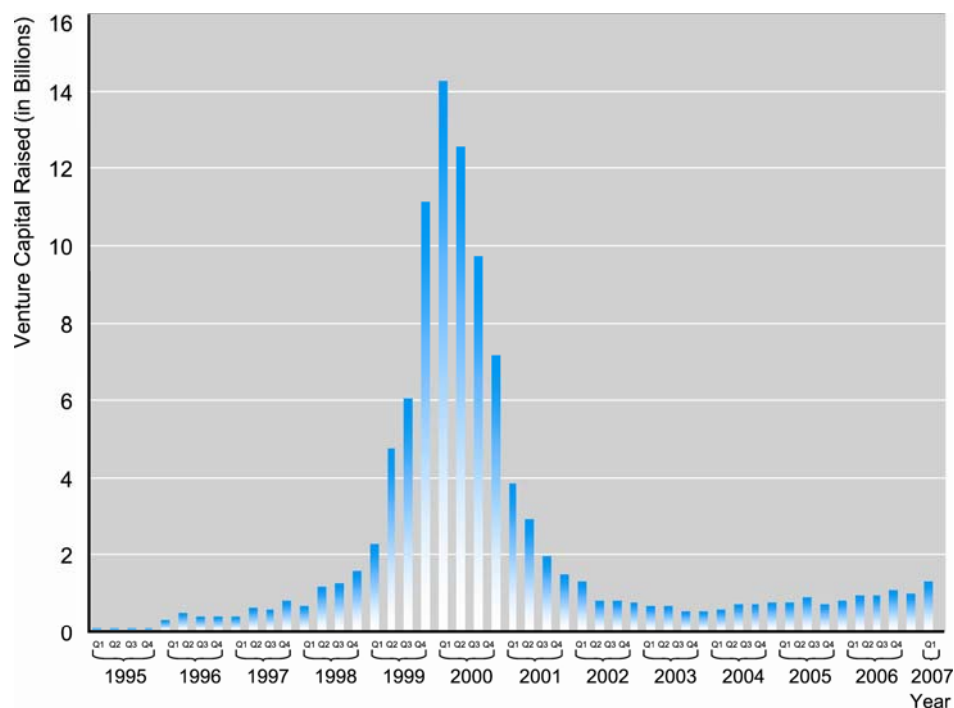
## Growth Projections for Broadband Home Connections and Wireless Web Devices in the USA




## The Visions and Forces Behind E-commerce: 1995–2000

- For computer scientists, vindicated a vision of universal communications and computing environment
- For economists, vision of a perfect Bertrand market (price, cost, and quality info is equally distributed) and friction-free commerce
- For entrepreneurs, their financial backers and marketing professionals, represented an extraordinary opportunity to return far above normal returns on investment.

## Quarterly Amounts Raised by Internet-Related Venture –Backed Firms







## **Insight on Business: Dot-com IPOs: it's Déjà Vu All Over Again Class Discussion**

- What explains the rapid growth in private investment in e-commerce firms in the period 1998–2000? Was this investment irrational?
- Why do you think investors in 2007 are once again interested in investing in or purchasing e-commerce companies? Would you invest in an e-commerce company today?
- What's happening today? Go to the PricewaterhouseCoopers MoneyTree Web site for the latest information:

<http://www.pwcmoneytree.com/moneytree/index.jsp>

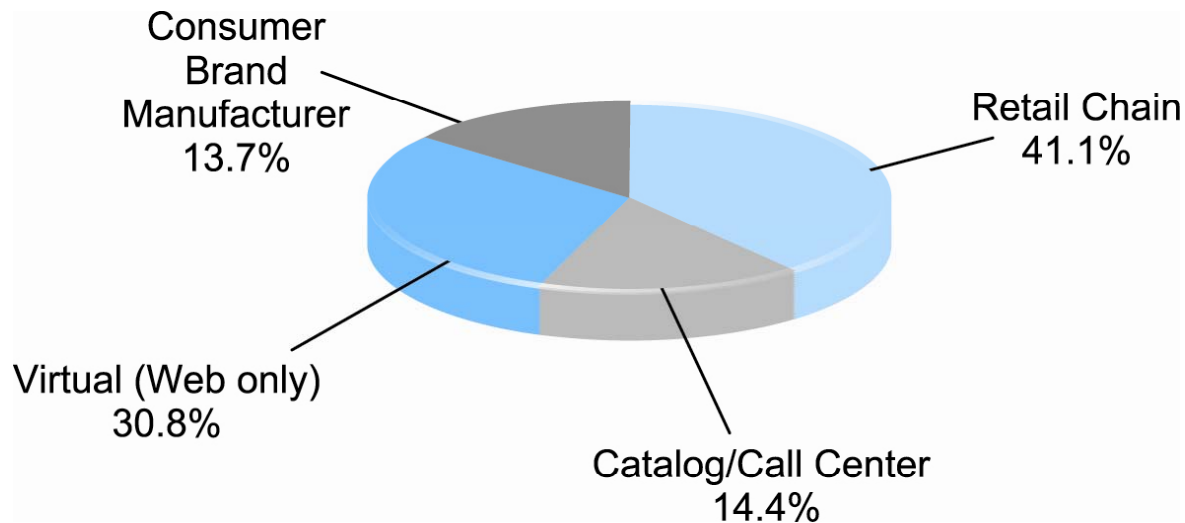


## **Assessing E-commerce: Successes, Surprises and Failures**

- A stunning technological success
- Early years have been a mixed success from a business perspective
- Many visions developed during early days of e-commerce not fulfilled due to very high costs of customer acquisition and retention, high overall costs of doing business on the Web compared to costs faced by most efficient stores, and customer's sensitivity to price increase for merchant's increased profit



# Share of Retail Online Sales by Type of Company



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Slide 1-29

## Predictions for the Future

- E-commerce technology will continue to propagate through all commercial activity
- E-commerce prices will rise to cover the real cost of doing business on the Web and pay investors reasonable rate of return
- E-commerce margins and profits will rise to levels more typical of all retailers
- In B2C and B2B, traditional Fortune 500 companies will play growing and dominant role
- Number of successful pure online companies will decline and most successful e-commerce firms will adopt mixed “clicks and bricks” strategies
- Growth of regulatory activity worldwide

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# Understanding E-commerce: Organizing Themes

- Technology: Development and mastery of digital computing and communications technology
- Business: New technologies present businesses and entrepreneurs with new ways of organizing production and transacting business
- Society: Intellectual property, individual privacy, and public policy

## The Internet and the Evolution of Corporate Computing

Figure 1.10, Page 44

### COMPUTER TECHNOLOGY

Mainframe Computers  
1950 – 1975



Minicomputers  
1970 – 1980



Personal Computers  
1980 – Present



Local Area Networks  
Client/Server Computing  
1980 – Present



Enterprise-wide Computing  
1990 – Present



Internet and World  
Wide Web  
1995 – Present



### BUSINESS APPLICATION

Transaction automation  
Payroll  
Accounts receivable


Business function automation  
Marketing  
Human Resources  
Design

Desktop automation  
Word processing  
Spreadsheets  
Databases

Workgroup automation  
Document sharing  
Project management  
Messaging, e-mail

Enterprise-wide automation  
Resource planning systems  
Integrated finance-manufacturing systems  
Human resource planning

Industrial system automation  
Supply chain management  
Customer relationship management  
Channel management systems



## **Insight on Society: Holding On to Your Privacy Online**

### **Class Discussion**

- What are the techniques of privacy invasion described in the case?
- Which of these techniques is the most privacy-invading? Why?
- Is the Internet and e-commerce any different than traditional markets with respect to privacy? Don't merchants always want to know their customer?
- How do you protect your privacy on the Web?