# CPET 581 E-Commerce & Business Technologies

## E-Commerce & Business: an Introduction

**References:**
***Chapter 1 of the text book: *e-Commerce: Business*, Technology, and Society, 8th edition, 2012, by K. C. Laudon and C. G. Traver, publisher Pearson Education Inc.,**
*** World Street Journal**
*** U.S. Census Bureau**

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**M.S. in Technology IT/Advanced Computer Applications Program**
**Purdue University Fort Wayne Campus**



## Topics

- Facebook: IPO
- PART I
  - E-Commerce
  - Major Trend in E-Commerce
  - E-Commerce Definitions
  - E-Commerce vs. E-Business
  - Unique Features of E-Commerce Technology
  - Types of E-Commerce
  - Origins and Growth of E-Commerce
  - Technology and E-Commerce in Perspective
  - Insights on Technology

## Topics (continue)

- PART II
- E-Commerce: A Brief History
  - E-Commerce 1995-2000: Innovation
  - E-Commerce 2001-2006: Consolidation
  - E-Commerce 2006-Present: Re-innovation
- Insight on Business
- Assessing E-Commerce: Success, Surprises, and Failure
- Prediction for the Future



## Topics (continue)

- PART III
- Understanding E-Commerce
  - Technology: Infrastructure
  - Business: Basic Concepts
  - Society: Taming the Juggernaut
- Insight on Society
  - Online Privacy
- Case Study: The Pirate Bay

## Facebook - IPO

- Is Facebook Ready for the Big Time? Interviewed by Shayndi Raice, WSJ, Jan. 14-15, 2012, pp. B1+B3,
  - CEO Mark Zuckerberg, 27, who built Facebook out of his Harvard College dorm room in 2004, and COO Sheryl Sanderberg, 42, a former Google Inc, executive
- Is Facebook Ready for Its IPO?, San Francisco, via Skype, 4:19 minute, Sheryle Sanderberg



## Facebook – IPO (cont.)

- Facebook: a social networking service, based at Menlo Park, California
- Mr. Zuckerberg has focused on building social features for the site
- Ms. Sanderberg has spent the last 3 ½ years: cultivating relationships with Global Brands and developing new ways for marketers to reach Facebook's users.
- Facebook's advertising revenue
  - $264 million in 2008
  - $3.8 billion in 2011
  - $6 billion by the end of 2012 (estimated by eMarketer)
- As Facebook social network move toward an IPO, It must prove to investors that it is ready for the big time.

## Facebook – WSJ Interview (Mark Zuckerberg)

- WSJ: How has Facebook changed when it comes to trying to make money?
- WSJ: How does that work?
- WSJ: What do you say to those who suggest Facebook can't grow revenue without alienating users?



## Facebook – WSJ Interview (Mark Zuckerberg)

- WSJ: What's the company's first focus, business or product?
- WSJ: What companies do you admire?
- WSJ: Do you place Facebook in the same category as those businesses?

## Facebook – WSJ Interview (Sheryl Sandberg)

- WSJ: What steps does Facebook still need to take to solidify its position?
- WSJ: How does that help Facebook make money?
- WSJ: What is the long-term vision for Facebook?



## Types of Business & E-Commerce

- U.S. Census Bureau Definitions, http://www.census.gov/econ/estats/definitions.html#e
- **E-Commerce:** This term describes transactions sold on-line whether over open networks such as the Internet or proprietary networks running systems such as Electronic Data Interchange (EDI).
- **Brick-and-mortar retailers:** This is a business model by which a company integrates both offline *(bricks)* and online *(clicks)* presences.

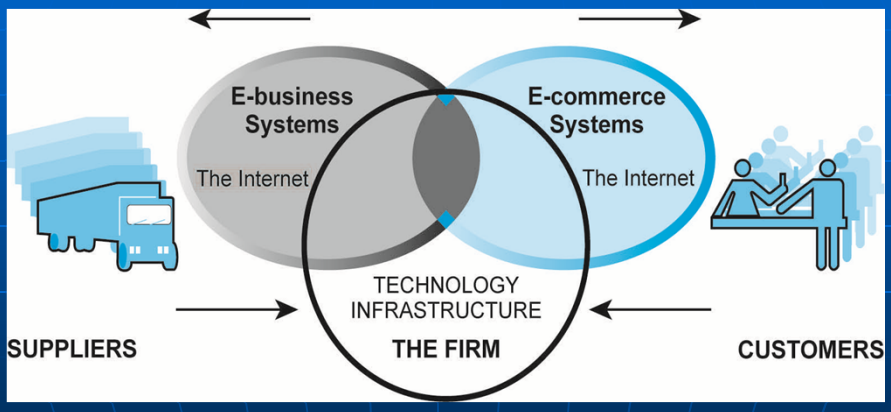
## Types of Business & E-Commerce

- **Business-to-business (B-to-B or B2B):** This term describes commerce transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer. In regards to the E-Stats report, this by definition is transactions by Manufacturers and Merchant Wholesalers.

- **Business-to-consumer (B-to-C or B2C):** This term describes activities of businesses serving end consumers with products and/or services. An example of a B2C transaction would be a person buying a pair of shoes from a retailer.



## Figure 1.1 The Difference Between E-Commerce & E-Business (page 12)



## Major Types of E-Commerce (pp. 20-22)

- Classified by Market Relationship
  - Business-to-Consumer (B2C)
  - Business-to-Business (B2B)
  - Consumer-to-Consumer (C2C)
- Classified by Technology
  - Peer-to-Peer (P2P)
  - Mobile Commerce (M-commerce)



## Major Types of E-Commerce (pp. 20-22)

- Classified by Market Relationship
  - Business-to-Consumer (B2C)
    - Portals Model (with search engines)
      - Horizontal portals (Yahoo, Google, Bing, Altivista, etc)
      - Vertical portals (WebMD)
    - Online Retailers (Store-Front Model with shopping cart: Amazon.com)
    - Content Providers
    - Transaction Brokers
    - Market Creators
    - Service Providers
    - Community providers, …

## Major Types of E-Commerce (pp. 20-22)

- Classified by Market Relationship
  - Business-to-Consumer (B2C)
  - Business-to-Business (B2B)
    - E-Distributors
    - E-Procurement companies
    - Exchanges and Industry Consortia
    - Industrial Networks: single firm networks, industry-wide networks
  - Consumer-to-Consumer (C2C)



## Major Types of E-Commerce (pp. 20-22)

- Classified by Market Relationship
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  - Business-to-Business (B2B)
  - Consumer-to-Consumer (C2C)
    - Auction Model: eBay

## Major Types of E-Commerce (pp. 20-22)

- Classified by Market Relationship
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    - Exchanges and Industry Consortia
    - Industrial Networks: single firm networks, industry-wide networks
  - Consumer-to-Consumer (C2C)
- Classified by Technology
  - Peer-to-Peer (P2P)
  - Mobile Commerce (M-commerce)



## E-Commerce: An Introduction

- E-Commerce Statistics in 2011 (from pp. 6-7)
  - Online consumer sales (expected to grow 14% vs. 4% of traditional retail)
  - The major source of online retail growth in the U.S. (existing buyers rather than new buyers)
  - Mobile commerce
  - Online population and activities

## E-Commerce: Online User Activities

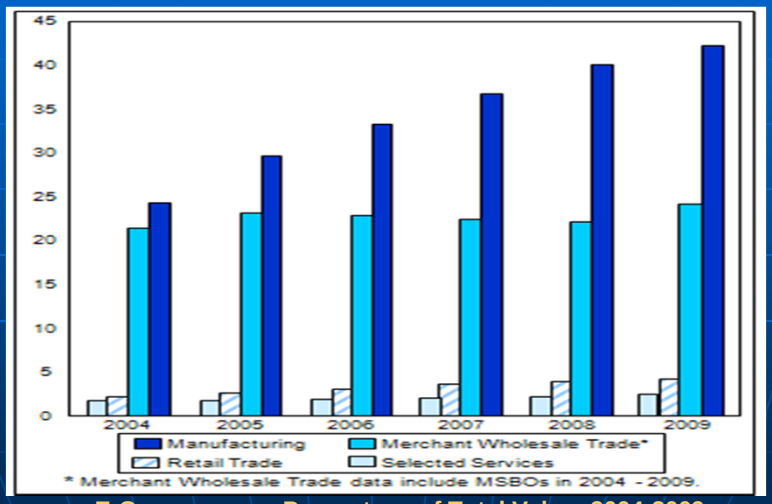
- Online Users Activities Survey 2011, Pew Internet & American Life Project, May 2011 Survey, http://www.pewinternet.org/Static-Pages/Trend-Data/Online-Activites-Total.aspx
  - 78% of American adult (18 and older) use the Internet
  - 92% send/read emails (11/1/2010)
  - 92% use search engine (5/1/0211)
  - 76% get news (5/1/2011)
  - 61% do online banking (5/1/2011)
  - 65% use social network: MySpace, Facebook or LinkedIn (5/1/2011)
  - 71% watch an online video: YouTube or Vimeo (5/1/2011)
  - 71% buy a product (5/1/2011), …



## E-Stats from U.S. Census Bureau

- The 2009 E-commerce multi-section "E-Stats" report, released May 26, 2011, http://www.census.gov/econ/estats/
- U.S. Shipments, Sales, Revenue and E-Commerce: 2009 and 2008 (in billions of dollars)
- Sector Analysis
  - Manufacturing
  - Merchant Wholesale
  - Retail
  - Selected Services

# The 2009 E-commerce multi-section "E-Stats" Report, released May 26, 2011




E-Commerce as Percentage of Total Value: 2004-2009



# U.S. Shipments, Sales, Revenues and E-Commerce: 2009 and 2008

**U.S. Shipments, Sales, Revenues and E-commerce: 2009 and 2008**

[Shipments, sales and revenues are in billions of dollars.]

| Description | Value of Shipments, Sales, or Revenue 2009 Total | 2009 E-commerce | 2008 Total | 2008 E-commerce | Year to Year Percent Change Total | Year to Year Percent Change E-commerce | % Distribution of E-commerce 2009 | % Distribution of E-commerce 2008 |
|---|---|---|---|---|---|---|---|---|
| **Total** * | **20,014** | **3,371** | **22,470** | **3,774** | **-10.9** | **-10.7** | **100.0** | **100.0** |
| **B-to-B*** | **9,602** | **3,073** | **11,630** | **3,482** | **-17.4** | **-11.8** | **91.2** | **92.3** |
| Manufacturing | 4,436 | 1,862 | 5,468 | 2,171 | -18.9 | -14.2 | 55.2 | 57.5 |
| Merchant Wholesale | 5,166 | 1,211 | 6,162 | 1,311 | -16.2 | -7.6 | 35.9 | 34.7 |
| Excluding MSBOs[1] | 3,707 | 729 | 4,435 | 739 | -16.4 | -1.4 | 21.6 | 19.6 |
| MSBOs | 1,459 | 483 | 1,727 | 572 | -15.5 | -15.7 | 14.3 | 15.2 |
| **B-to-C*** | **10,412** | **298** | **10,840** | **292** | **-3.9** | **2.1** | **8.8** | **7.7** |
| Retail | 3,638 | 145 | 3,953 | 142 | -8.0 | 2.1 | 4.3 | 3.7 |
| Selected Services | 6,774 | 153 | 6,887 | 150 | -1.6 | 2.2 | 4.5 | 4.0 |

* We estimate business-to-business (B-to-B) and business-to-consumer (B-to-C) e-commerce by making several simplifying assumptions: manufacturing and wholesale e-commerce is entirely B-to-B, and retail and service e-commerce is entirely B-to-C. We also ignore definitional differences among shipments, sales, and revenues. The resulting B-to-B and B-to-C estimates, while not directly measured, show that almost all the dollar volume of e-commerce activity involves transactions between businesses. See the "Note to reader" for cautions relating to the interpretation of the "Total" shown here.
[1]Manufacturers' Sales Branches and Offices

## E-Commerce: Innovation, Consolidation, and Re-innovation

- E-Commerce: A Brief History
  - E-Commerce 1995-2000: Innovation
  - E-Commerce 2001-2006: Consolidation
  - E-Commerce 2006-Present: Re-innovation
- Insight on Business
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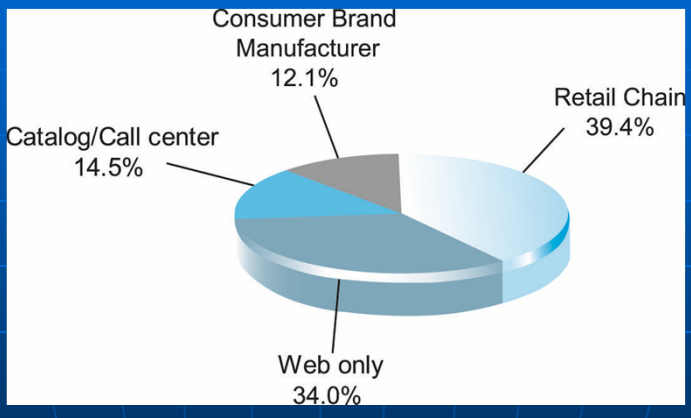
## Figure 1.7 Share of Retail Online Sales by Type of Company (Source Internet Retailer, 2010, 2011)




- 2011: Retail Chain: 36.9%, Web Only: 37.9%, Consumer Brand Manufacturer: 11.6%, Catalog/Call Center: 13.6%

## Understanding E-Commerce

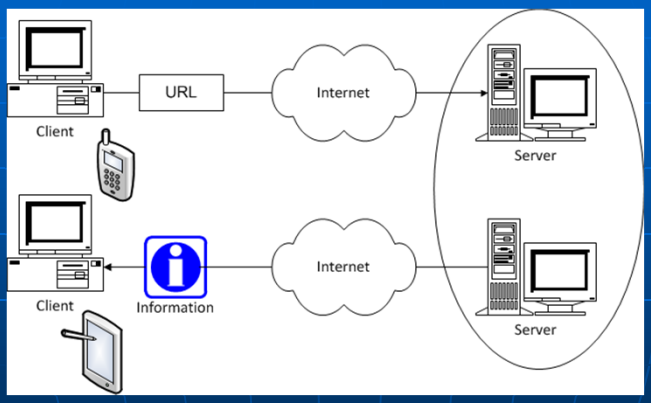
- Understanding E-Commerce
  - Technology: Infrastructure
  - Business: Basic Concepts
  - Society: Taming the Juggernaut
- Insight on Society
  - Online Privacy
- Case Study: The Pirate Bay



## E-Commerce Infrastructure & Enabling Technology

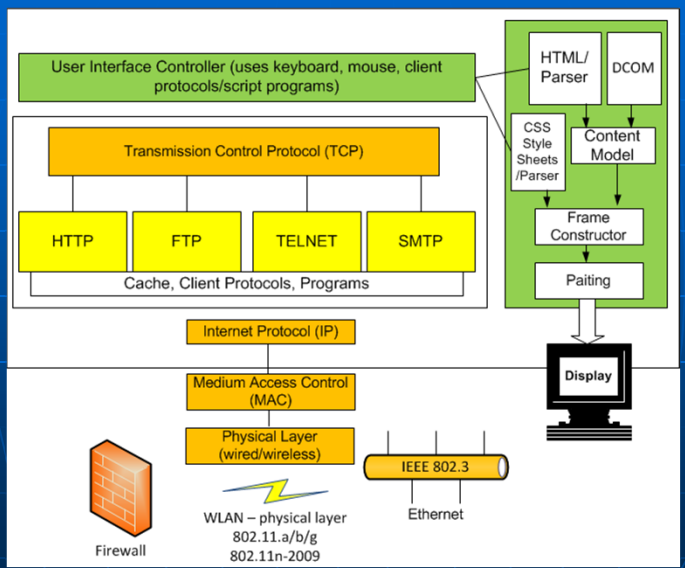
- Computing Architecture/Systems:
  - Client/Server Computers
  - Cloud computing
  - Mobile devices: Smartphone, Tablet, iPad
  - Web servers
- Wired/Wireless Network protocols: TCP/IP, 802.11a/b/g/n, etc
- Web Languages:
  - HTML, CSS, XML
- Programming Languages
  - Client side: Javascript, AJAX, Flash
  - Server side: Java, PHP, Perl, Ruby on Rails, ColdFusion

# Web Client-Server Computing Model

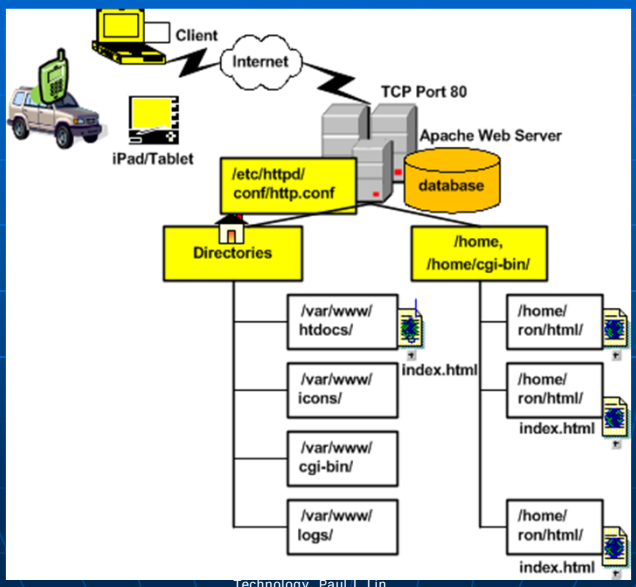





# Web Browser Architecture

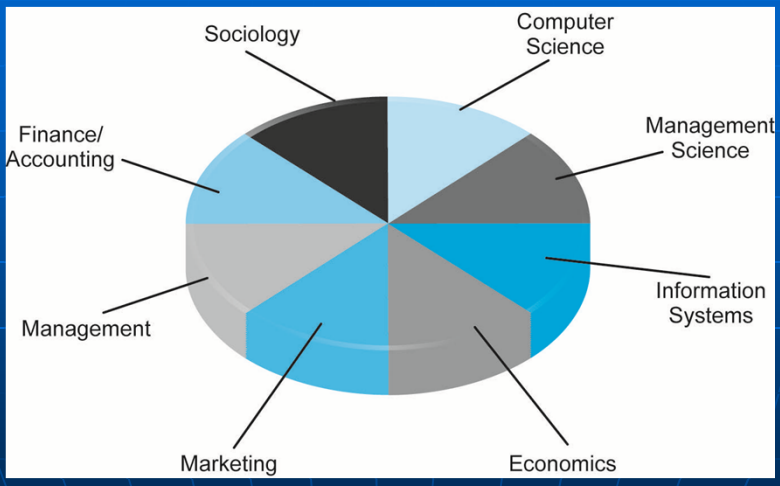


## An Apache Web Server

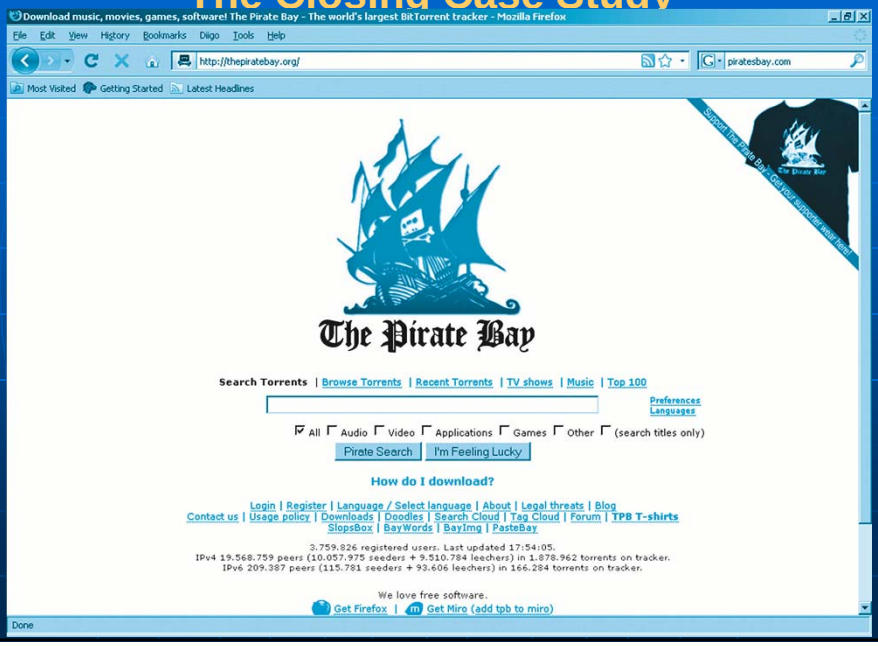





## Figure 1.9 Disciplines Concerned with E-Commerce (page 49)



# The Closing Case Study




# Discussion: Homework 1 Assignment (Jan. 10-17)

- Paper Review Guidelines
  - Major Theme of the Paper
  - An Introduction: Key Idea, problems, solutions that the author(s) presented
  - Examine and reports the details and facts proposed by the author and prove their claims are valid
  - Check the correctness and quality references (bibliography) listed in the paper
  - Compare the information from the conclusion and introduction
  - Your summary and lesson learned

## Discussion: Homework 1 Assignment (Jan. 10-17)

- 1. Study the article: "Living in a Digital World," Communications of ACM, Oct. 2011, pp. 17-19, and write a summary report and lesson learned from this article (minimum 1 and ½ pages; single space) .
- 
- 2. Choose one Article from IEEE IT Professional listed below; study the selected article and write a summary report and lesson learned from the selected article (minimum 1 and ½ pages; single space)



## Discussion: Homework 1 Assignment (Jan. 10-17)

- "Where are we in Global E-Commerce," R. Veeramani and N. Talbert, IEEE IT Professional, Nov/ Dec 1999, pp. 46-52
- "Australia: Raising the E-Commerce Comfort," P. Argy and R. Bollen, IEEE IT Professional, Nov/Dec 1999, pp. 56-58
- "Europe: Making Plans to Integrate E-Commerce," C. Phillips, , IEEE IT Professional, Nov/Dec 1999, pp. 59-61
- "Latin America: Ready and Waiting Electronic Commerce," A. Vanyi-Robin, S. Weeks, IEEE IT Professional, Nov/Dec 1999, pp. 62-62
- "Singapore: Ripe for an E-Commerce Explosion," IEEE IT Professional, Nov/Dec 1999, pp. 65-67

# Summary