Management Information Systems: Managing the Digital Firm

Fifteenth edition

Management Information Systems

Managing the Digital Firm

FIFTEENTH EDITION

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GLOBAL EDITION

Chapter 10
E-commerce: Digital Markets, Digital Goods

Learning Objectives

- **10-1** What are the unique features of e-commerce, digital markets, and digital goods?

- **10-2** What are the principal e-commerce business and revenue models?

- **10-3** How has e-commerce transformed marketing?

- **10-4** How has e-commerce affected business-to-business transactions?

- **10-5** What is the role of m-commerce in business, and what are the most important m-commerce applications?

- **10-6** What issues must be addressed when building an e-commerce presence?

Video Cases

- Case 1: Walmart Takes on Amazon: A Battle of IT and Management Systems

- Case 2: Groupon: Deals Galore

- Case 3: Etsy: A Marketplace and Community

- *Instructional Video 1: Walmart's E-commerce Fulfillment Center Network*

- *Instructional Video 2: Behind the Scenes of an Amazon Warehouse*

Uber Storms Europe: Europe Strikes Back

- Problem
  - Opportunities presented by new technology
  - Political and regulatory hurdles

- Solutions
  - Driver and rider apps
  - Demand prediction software

- Illustrates the use of IT to create new services as well as business models

- Demonstrates the disruptive effects of new technologies

E-commerce Today

- E-commerce: Use of the Internet and web to transact business

- Began in 1995 and grew exponentially; still stable even in a recession

- Companies that survived the dot-com bubble now thrive

- The new e-commerce: social, mobile, local

- Move from desktop to smartphone

Figure 10.1: The Growth of E-commerce
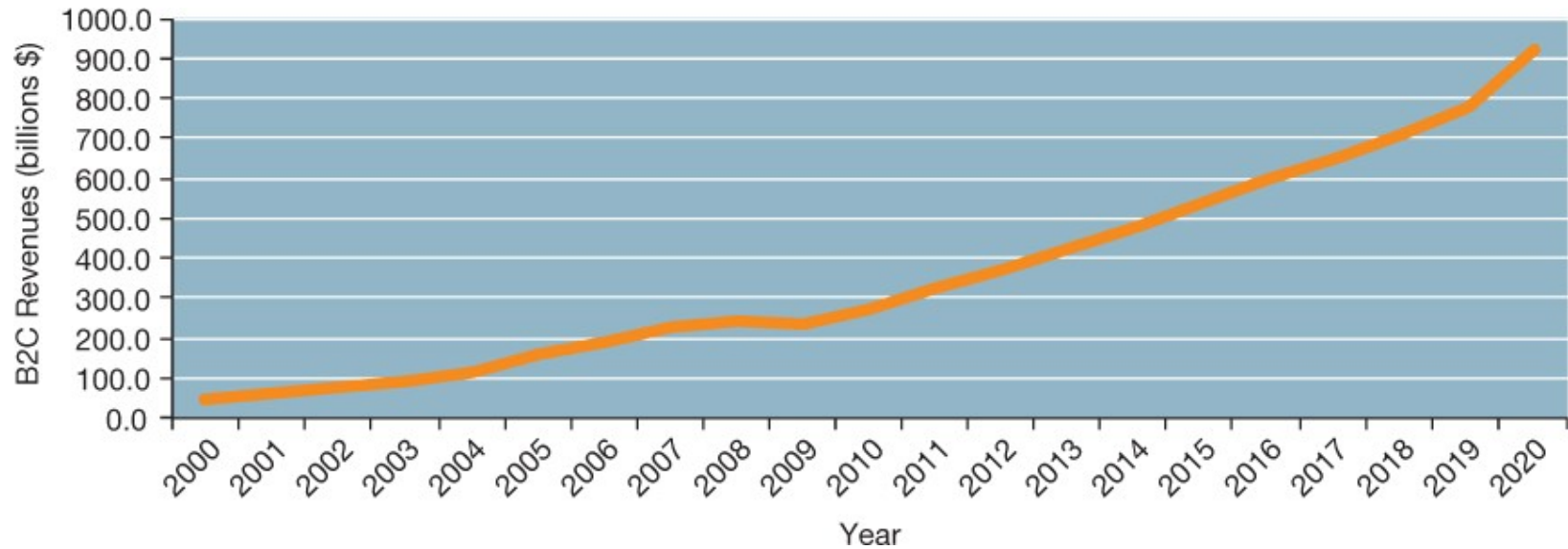
Why E-commerce Is Different (1 of 2)

- Ubiquity
  - Marketspace is virtual
  - Transaction costs reduced

- Global reach
  - Transactions cross cultural and national boundaries

- Universal standards
  - One set of technology standards: Internet standards

- Richness
  - Supports video, audio, and text messages

Why E-commerce Is Different (2 of 2)

- Interactivity

- Information density
  - Greater price and cost transparency
  - Enables price discrimination

- Personalization/customization
  - Technology permits modification of messages, goods

- Social technology
  - Promotes user content generation and social networking

TABLE 10.2 EIGHT UNIQUE FEATURES OF E-COMMERCE TECHNOLOGY

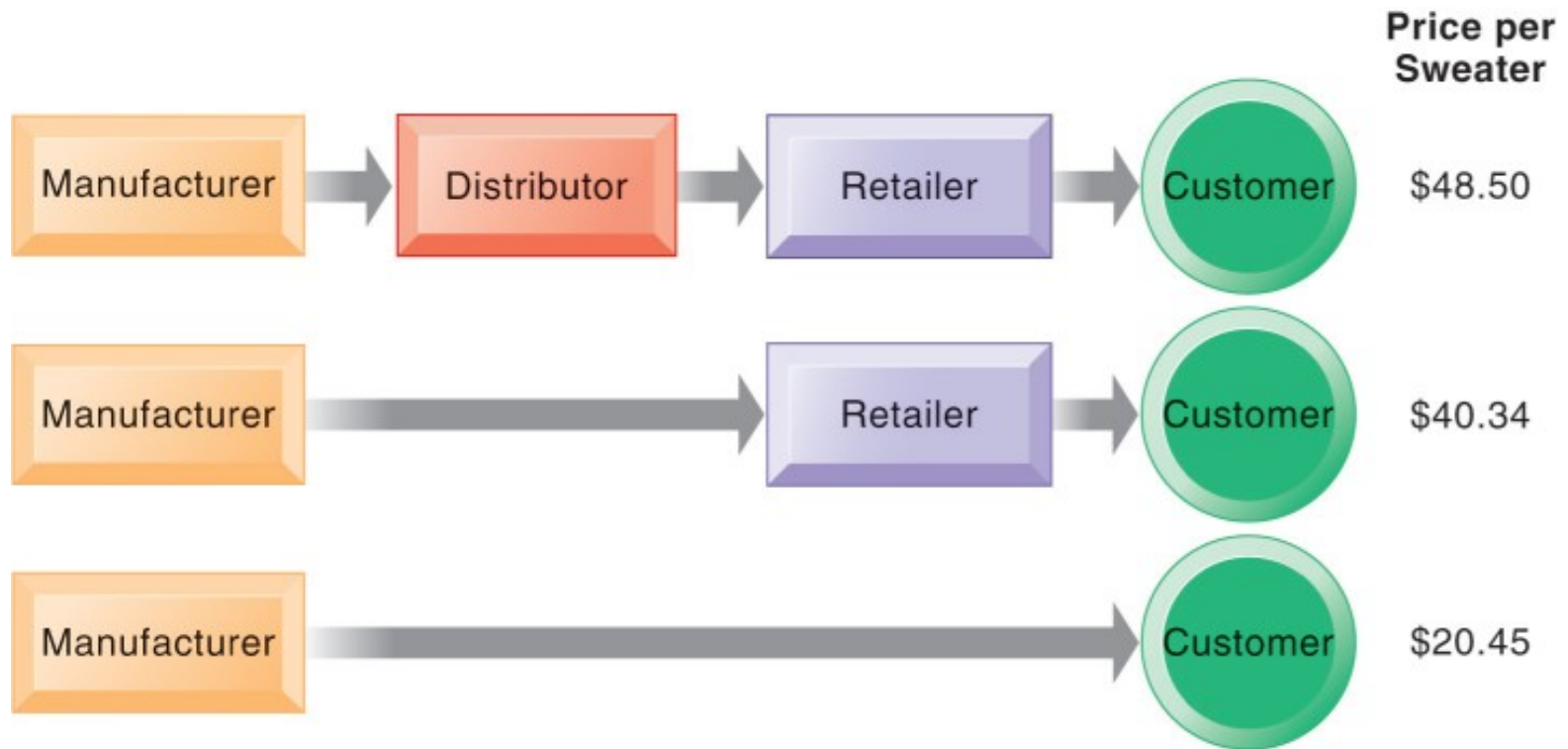| E-COMMERCE TECHNOLOGY DIMENSION	BUSINESS SIGNIFICANCE
Ubiquity. Internet/web technology is available everywhere: at work, at home, and elsewhere by desktop and mobile devices. Mobile devices extend service to local areas and merchants.	The marketplace is extended beyond traditional boundaries and is removed from a temporal and geographic location. Marketspace is created; shopping can take place anytime, anywhere. Customer convenience is enhanced, and shopping costs are reduced.
Global Reach. The technology reaches across national boundaries, around the earth.	Commerce is enabled across cultural and national boundaries seamlessly and without modification. The marketspace includes, potentially, billions of consumers and millions of businesses worldwide.
Universal Standards. There is one set of technology standards, namely Internet standards.	With one set of technical standards across the globe, disparate computer systems can easily communicate with each other.
Richness. Video, audio, and text messages are possible.	Video, audio, and text marketing messages are integrated into a single marketing message and consumer experience.
Interactivity. The technology works through interaction with the user.	Consumers are engaged in a dialogue that dynamically adjusts the experience to the individual and makes the consumer a participant in the process of delivering goods to the market.
Information Density. The technology reduces information costs and raises quality.	Information processing, storage, and communication costs drop dramatically, whereas currency, accuracy, and timeliness improve greatly. Information becomes plentiful, cheap, and more accurate.
Personalization/Customization. The technology allows personalized messages to be delivered to individuals as well as to groups.	Personalization of marketing messages and customization of products and services are based on individual characteristics.
Social Technology. The technology supports content generation and social networking.	New Internet social and business models enable user content creation and distribution and support social networks.

Key Concepts in E-commerce: Digital Markets and Digital Goods in a Global Marketplace

- Internet and digital markets have changed the way companies conduct business

- Information asymmetry reduced

- Menu costs, search and transaction costs reduced

- Dynamic pricing enabled

- Switching costs

- Delayed gratification

- Disintermediation

TABLE 10.3 DIGITAL MARKETS COMPARED WITH TRADITIONAL MARKETS

	DIGITAL MARKETS	TRADITIONAL MARKETS
Information asymmetry	Asymmetry reduced	Asymmetry high
Search costs	Low	High
Transaction costs	Low (sometimes virtually nothing)	High (time, travel)
Delayed gratification	High (or lower in the case of a digital good)	Lower: purchase now
Menu costs	Low	High
Dynamic pricing	Low cost, instant	High cost, delayed
Price discrimination	Low cost, instant	High cost, delayed
Market segmentation	Low cost, moderate precision	High cost, less precision
Switching costs	Higher/lower (depending on product characteristics)	High
Network effects	Strong	Weaker
Disintermediation	More possible/likely	Less possible/unlikely

Figure 10.2: The Benefits of Disintermediation to the Consumer

Price per Sweater

Manufacturer → Distributor → Retailer → Customer — $48.50

Manufacturer → Retailer → Customer — $40.34

Manufacturer → Customer — $20.45

Digital Goods

- Goods that can be delivered over a digital network

- Cost of producing first unit is almost entire cost of product

- Costs of delivery over the Internet very low

- Marketing costs remain the same; pricing highly variable

- Industries with digital goods are undergoing revolutionary changes (publishers, record labels, etc.)

TABLE 10.4 HOW THE INTERNET CHANGES THE MARKETS FOR DIGITAL GOODS

	DIGITAL GOODS	TRADITIONAL GOODS
Marginal cost/unit	Zero	Greater than zero, high
Cost of production	High (most of the cost)	Variable
Copying cost	Approximately zero	Greater than zero, high
Distributed delivery cost	Low	High
Inventory cost	Low	High
Marketing cost	Variable	Variable
Pricing	More variable (bundling, random pricing games)	Fixed, based on unit costs

Types of E-commerce

- Three major types
  - Business-to-consumer (B2C)
    - Example: BarnesandNoble.com
  - Business-to-business (B2B)
    - Example: ChemConnect
  - Consumer-to-consumer (C2C)
    - Example: eBay

- E-commerce can be categorized by platform
  - Mobile commerce (m-commerce)

E-commerce Business Models

- Portal

- E-tailer

- Content provider

- Transaction broker

- Market creator

- Service provider

- Community provider

E-commerce Revenue Models

- Advertising

- Sales

- Subscription

- Free/Freemium

- Transaction fee

- Affiliate

TABLE 10.5 INTERNET BUSINESS MODELS

| CATEGORY	DESCRIPTION	EXAMPLES
E-tailer	Sells physical products directly to consumers or to individual businesses.	Amazon Blue Nile
Transaction broker	Saves users money and time by processing online sales transactions and generating a fee each time a transaction occurs.	ETrade.com Expedia
Market creator	Provides a digital environment where buyers and sellers can meet, search for products, display products, and establish prices for those products; can serve consumers or B2B e-commerce, generating revenue from transaction fees.	eBay Priceline.com Exostar Elemica
Content provider	Creates revenue by providing digital content, such as news, music, photos, or video, over the web. The customer may pay to access the content, or revenue may be generated by selling advertising space.	WSJ.com GettyImages.com iTunes.com Games.com
Community provider	Provides an online meeting place where people with similar interests can communicate and find useful information.	Facebook Google+ Twitter
Portal	Provides initial point of entry to the web along with specialized content and other services.	Yahoo Bing Google
Service provider	Provides applications such as photo sharing, video sharing, and user-generated content as services; provides other services such as online data storage and backup.	Google Apps Photobucket.com Dropbox

How Has E-commerce Transformed Marketing?

- Internet provides new ways to identify and communicate with customers

- Long tail marketing

- Internet advertising formats

- Behavioral targeting
    - Tracking online behavior of individuals

- Programmatic ad buying

- Native advertising

Figure 10.3: Website Visitor Tracking

Click 1

The shopper clicks on the home page. The store can tell that the shopper arrived from the Yahoo! portal at 2:30 PM (which might help determine staffing for customer service centers) and how long she lingered on the home page (which might indicate trouble navigating the site). Tracking beacons load cookies on the shopper's browser to follow her across the web.

Click 2

Click 3
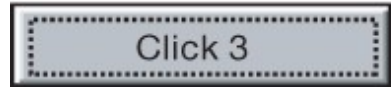
Click 4

Click 5

The shopper clicks on blouses, clicks to select a woman's white blouse, then clicks to view the same item in pink. The shopper clicks to select this item in a size 10 in pink and clicks to place it in her shopping cart. This information can help the store determine which sizes and colors are most popular. If the visitor moves to a different site, ads for pink blouses will appear from the same or different vendor.

Click 6

From the shopping cart page, the shopper clicks to close the browser to leave the Website without purchasing the blouse. This action could indicate the shopper changed her mind or that she had a problem with the website's checkout and payment process. Such behavior might signal that the website was not well designed.

Figure 10.4: Website Personalization

Figure 10.5: How an Advertising Network Such as DoubleClick Works
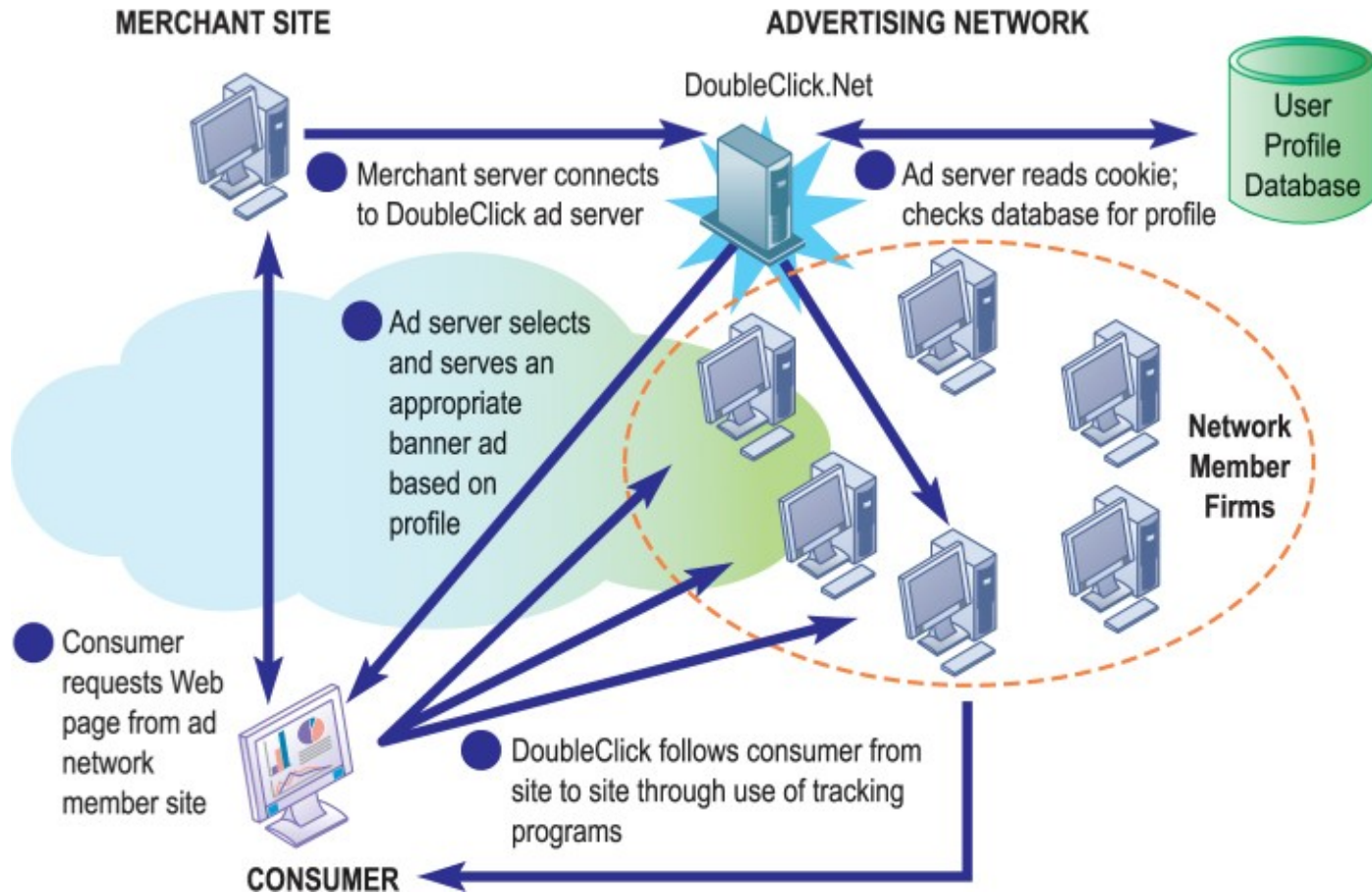
Social E-commerce and Social Network Marketing (1 of 2)

- Social e-commerce based on digital social graph

- Features of social e-commerce driving its growth
  - Newsfeed
  - Timelines
  - Social sign-on
  - Collaborative shopping
  - Network notification
  - Social search (recommendations)

- Social media
  - Fastest growing media for branding and marketing

Social E-commerce and Social Network Marketing (2 of 2)

- Social network marketing
  - Seeks to leverage individuals' influence over others
  - Targeting a social network of people sharing interests and advice
  - Facebook's "Like" button
  - Social networks have huge audiences

- Social shopping sites

- Wisdom of crowds

- Crowdsourcing

Interactive Session: Technology: Getting Social with Customers

- Class discussion
  - Assess the management, organization, and technology issues for using social media technology to engage with customers.
  - What are the advantages and disadvantages of using social media for advertising, brand building, market research, and customer service?
  - Give an example of a business decision in this case study that was facilitated by using social media to interact with customers.
  - Should all companies use social media technology for customer service and marketing? Why or why not? What kinds of companies are best suited to use these platforms?

How Has E-commerce Affected Business-to Business Transactions?

- U.S. B2B trade in 2015 is $14.6 trillion

  – U.S. B2B e-commerce in 2015 is $6.2 trillion

- Internet and networking helps automate procurement

- Variety of Internet-enabled technologies used in B2B

  – Electronic data interchange (EDI)

  – Private industrial networks (private exchanges)

  – Net marketplaces

  – Exchanges

Electronic Data Interchange (EDI)

- Computer-to-computer exchange of standard transactions such as invoices, purchase orders

- Major industries have EDI standards
  - Define structure and information fields of electronic documents

- More companies are moving toward web-enabled private networks
  - Allow them to link to a wider variety of firms than EDI allows
  - Enable sharing a wider range of information

Figure 10.6: Electronic Data Interchange
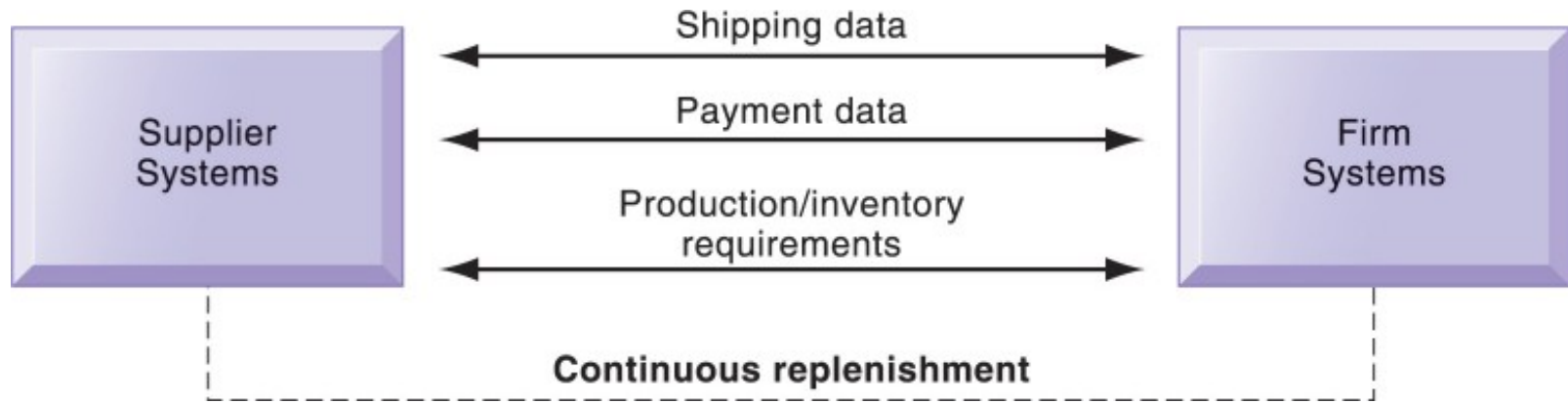
New Ways of B2B Buying and Selling

- Private industrial networks
  - Private exchanges
  - Large firm using a secure website to link to suppliers and partners

- Net marketplaces (e-hubs)
  - Single digital marketplace for many buyers and sellers
  - May focus on direct or indirect goods
  - May be vertical or horizontal marketplaces

- Exchanges
  - Independently owned third-party Net marketplaces for spot purchasing

Figure 10.7: A Private Industrial Network

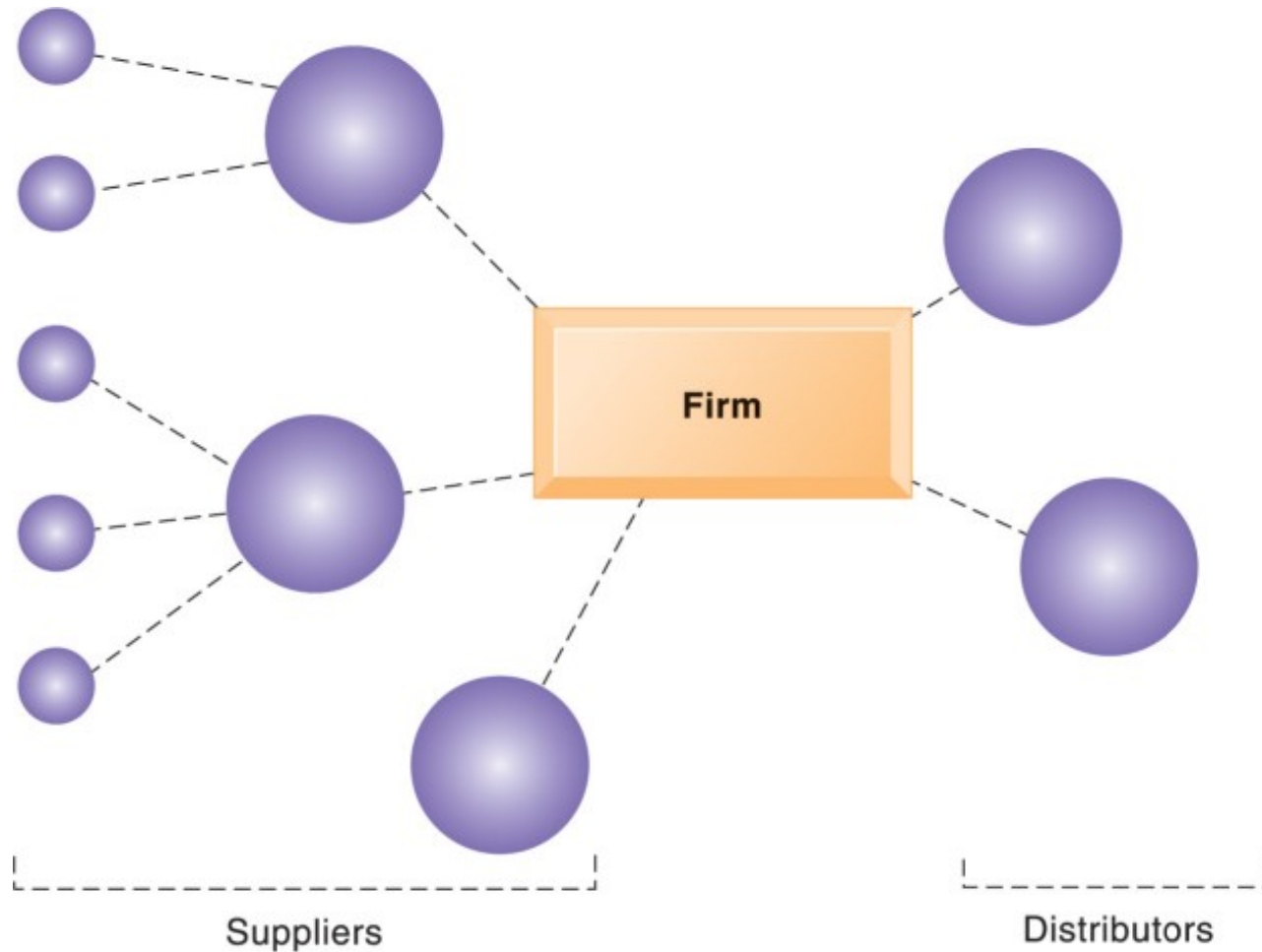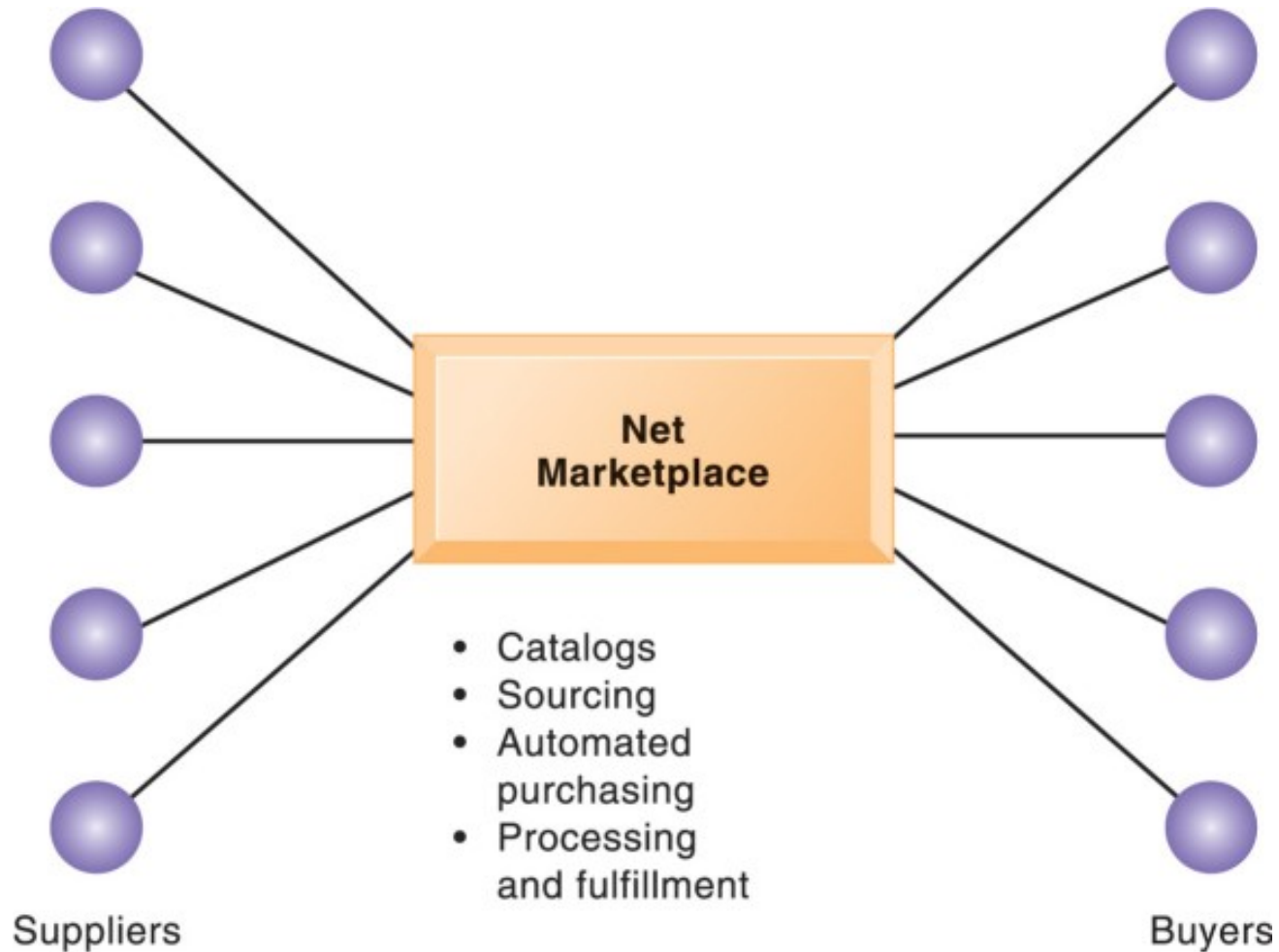

Firm

Suppliers

Distributors

Figure 10.8: A Net Marketplace

What Is the Role of M-commerce in Business, and What Are the Most Important M-commerce Applications?

- M-commerce in 2017 is 37 percent of all e-commerce

- Fastest growing form of e-commerce
  - Some areas growing at 50 percent or more

- Main areas of growth
  - Mass market retailing (Amazon, eBay, etc.)
  - Sales of digital content (music, TV, etc.)
  - In-app sales to mobile devices

Figure 10.9: Mobile Retail Commerce Revenues
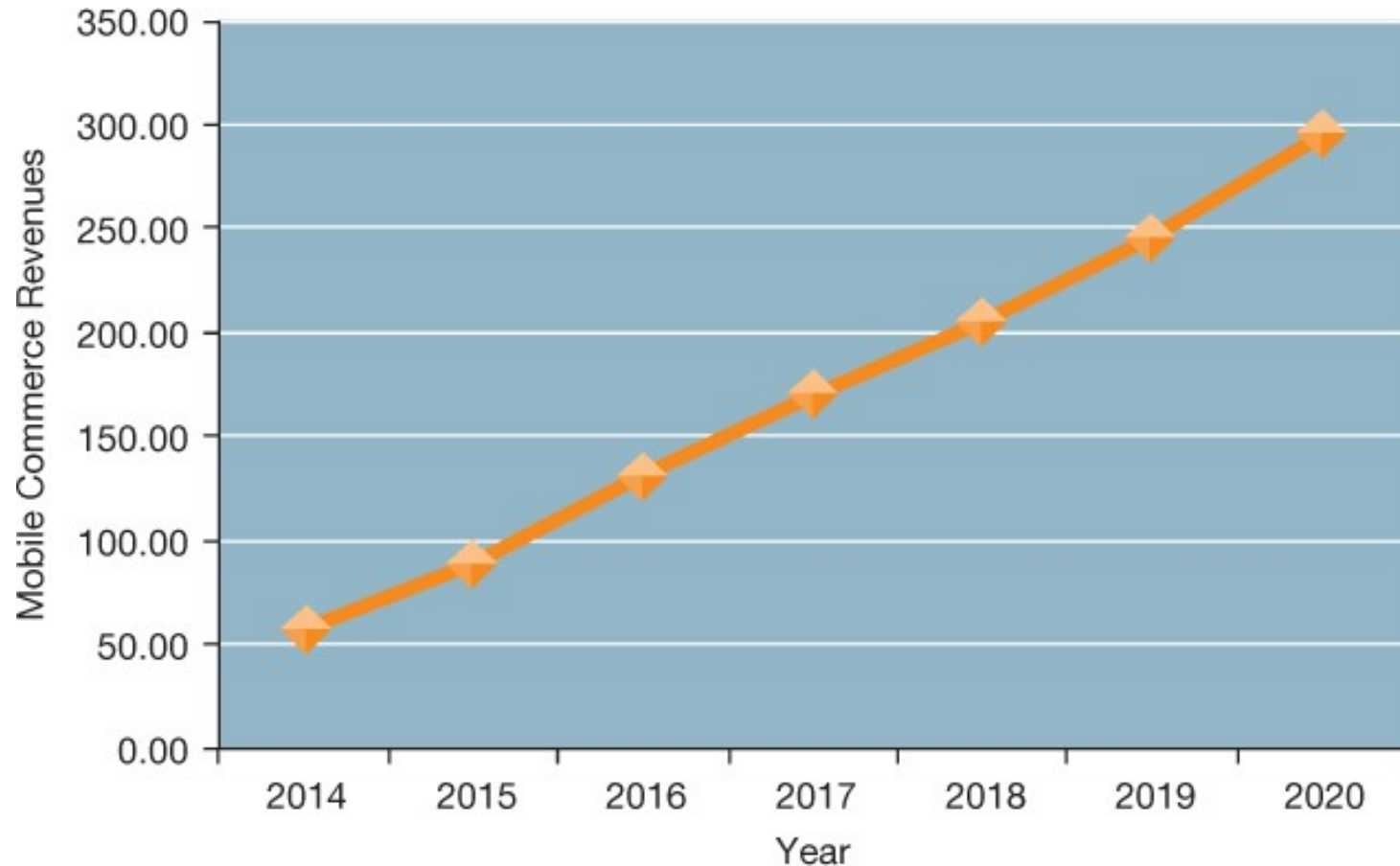
Location-Based Services and Applications

- Used by 74 percent of smartphone owners

- Based on GPS map services

- Geosocial services
  - Where friends are

- Geoadvertising
  - What shops are nearby

- Geoinformation services
  - Price of house you are passing

Interactive Session: Organizations: Can Instacart Deliver?

- Class discussion
  - Analyze Instacart using the value chain and competitive forces models. What competitive forces does the company have to deal with? What is its value proposition?
  - Explain how Instacart's business model works. How does the company generate revenue?
  - What is the role of information technology in Instacart's business model?
  - Is Instacart's model for selling online groceries viable? Why or why not?

Other Mobile Commerce Services

- Financial account management apps
  - Banks, credit card companies

- Mobile advertising market
  - Google and Facebook are largest markets
  - Ads embedded in games, videos, and mobile apps

- 55 percent of online retailers have m-commerce websites

What Issues Must be Addressed when Building an E-commerce Presence?

- Most important management challenges
  - Developing clear understanding of business objectives
  - Knowing how to choose the right technology to achieve those objectives

- Develop an e-commerce presence map
  - Four areas: websites, e-mail, social media, offline media

- Develop a timeline: milestones
  - Breaking a project into discrete phases
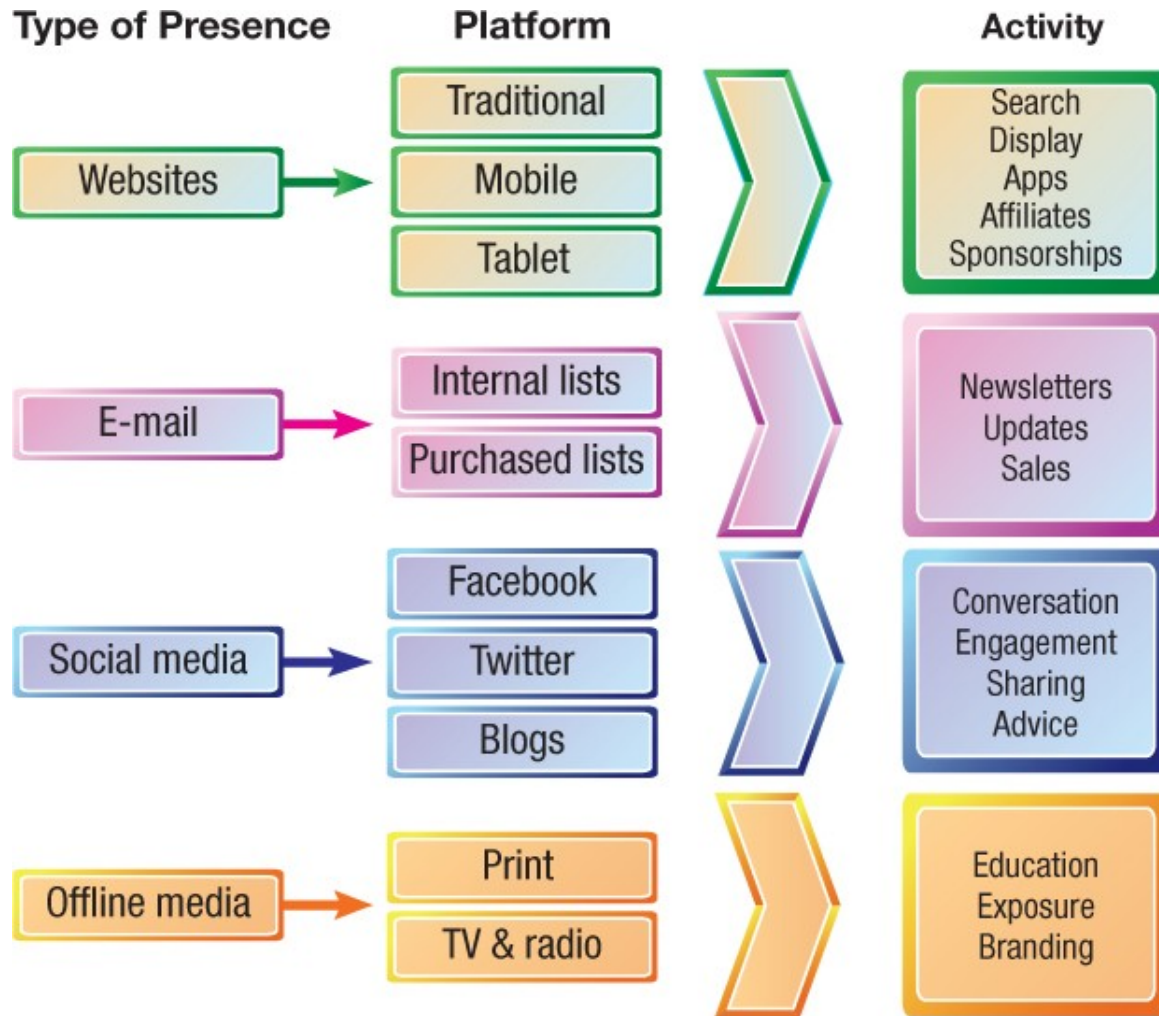
Figure 10.10: E-commerce Presence Map

TABLE 10.8 E-COMMERCE PRESENCE TIMELINE

PHASE	ACTIVITY	MILESTONE
Phase 1: Planning	Envision web presence; determine personnel.	Web mission statement
Phase 2: Website development	Acquire content; develop a site design; arrange for hosting the site.	Website plan
Phase 3: Web Implementation	Develop keywords and metatags; focus on search engine optimization; identify potential sponsors.	A functional website
Phase 4: Social media plan	Identify appropriate social platforms and content for your products and services.	A social media plan
Phase 5: Social media implementation	Develop Facebook, Twitter, and Pinterest presence.	Functioning social media presence
Phase 6: Mobile plan	Develop a mobile plan; consider options for porting your website to smartphones.	A mobile media plan