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# Electronic Commerce 2018

A Managerial and Social Networks  
Perspective

Ninth Edition

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## Preface

Electronic commerce, the topic of this book, has grown rapidly, with companies like Facebook, Google, Pinterest, LinkedIn, Uber, Alibaba Group, and Amazon.com setting new levels of performance every year.

Electronic commerce (EC) is a business model in which transactions take place over electronic networks, mostly the Internet. It includes the process of electronically buying and selling goods, services, and information. Certain EC applications, such as online buying and selling stocks and airline tickets, are reaching maturity, some even exceeding non-Internet trade volume. However, EC is not just about buying and selling; it also is about electronically innovating, communicating, collaborating, and discovering information. It is about e-learning, e-customer service, e-government, social networking, problem-solving, and much more. EC is having an impact on a significant portion of the world, affecting businesses, professions, trade, and, of course, people. It is undoubtedly improving our quality of life.

A most important development in EC since 2014 is the phenomenal growth of social network services, especially Facebook, Google+, and Twitter. Also impressive is the trend toward conducting EC via mobile devices. Another major development is the global expansion of EC, especially in China, where you can find the world's largest EC company. In addition, attention is given to artificial intelligence and its applications and to smart commerce as well as to the use of analytics and big data to enhance EC. Finally, some emerging EC business models are transforming industries (e.g., travel, banking, fashion, and transportation).

In the ninth edition (2017–2018), we bring forth the latest trends in e-commerce, including smart commerce, social commerce, social collaboration, shared economy, innovations, and mobility.

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### What's New in This Edition?

The following are the major changes in this edition:

#### New Chapters

1. Smart (intelligent) commerce (Chap. 7) is emerging as an important development.
2. EC Strategy, Globalization, SMEs, and Implementation (Chap. 14) replaces Chaps. 13 and 14 in the eighth edition.

- **Chapters with major changes:**

Chapter 5 includes two new sections about sharing economy and e-health. Also, completely upgraded was the P2P section. The topic of collaborative commerce was transferred to Chap. 4.

Chapter 6 was streamlined for m-commerce activities and applications. Several sections were transferred to new Chap. 7. Much attention is given to mobile apps.

Chapter 10 (old Chap. 9) is concentrating on marketing and advertising in EC instead of online behavior. Chap. 12 (EC payment) was completely restructured with major attention given to digital currencies.

Chapter 13 (EC order fulfillment) was reorganized and updated to include robotics, 3D printing, and drones.

## **New Topics**

Many new topics were added in all chapters, while obsolete topics were deleted.

Here is a small sample of new topics: the changing retailing landscape, virtual reality applications, robot advisors, chatbots, virtual personal assistants, fitness trackers, Nest (of Google), augmented reality application, fake content, Internet of things (IoT) applications, Pokemon GO craze, drop-shipping, ransomware, 3D printing for mass customization, robots in EC warehouses, drones and robots for deliveries, and new advertisement methods.

## **New Cases**

We replaced more than 20 cases (e.g., new cases: Airbnb, Uber, Costco global payments, Bitcoin, money transfer via smartphones in Africa, Instagram, and Pokemon GO).

To emphasize the importance of security in EC, ransomware and DDoS attack cases are added.

## **New Coauthor**

Dr. Jon Outland is bringing considerable expertise in the area of e-marketing.

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## **The Book's Learning Objectives (Learning Outcomes)**

Upon completion of this book, the reader will be able to:

1. Define all types of e-commerce systems and describe their major business and revenue models, drivers, and benefits.
2. Describe all the major mechanisms that are used in executing e-commerce.
3. Describe all methods and models of selling products and services online from business to individual customers.
4. Understand all online business-to-business activities, including selling, procurement, auctions, and collaboration.
5. Describe EC activities other than selling online, such as e-government, e-learning/e-training, e-health, and sharing economy.
6. Describe the importance of mobile commerce and its content and implementation.
7. Describe the major applications of artificial intelligence in EC.
8. Describe social networks, social customers, and social software as facilitators of social commerce.
9. Describe the landscape of social commerce applications, including social shopping and advertising, social CRM, social entertainment, and crowdsourcing.
10. Describe social enterprise systems.
11. Describe the connected e-commerce and Internet of things and its smart applications.
12. Understand online consumer behavior.

13. Describe marketing and advertising in the Web environment.
14. Describe security issues and their solutions in e-commerce, including EC fraud protection.
15. Describe the use of e-payments, including mobile payments, and digital currency in e-commerce.
16. Understand order fulfillment in e-commerce and its relationship to supply chain management.
17. Understand e-commerce strategy and describe its process and steps, including justification, planning, implementation, and assessment.
18. Describe the global aspects of e-commerce.
19. Explain the issues of using e-commerce by small- and medium-sized companies.
20. Understand the ethical, legal, social, and business environments within which e-commerce operates.

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## Features of This Book

Several features are unique to this book.

### Most Comprehensive EC Textbook

This is the most comprehensive EC textbook available. It covers more topics than any other text, and it provides numerous examples and case studies as well as hundreds of links to resources and references.

### Managerial Orientation

e-Commerce can be approached from two major perspectives: technological and managerial. This text uses the second approach. Most of the presentations are about EC applications and their implementation. However, we do recognize the importance of the technology; therefore, we present the essentials of security in Chap. 12 and the essentials of infrastructure and systems development in Chaps. 2 and 14. We also provide some detailed technology material in the five online tutorials on the book's website ([affordable-ecommerce-textbook.com](http://affordable-ecommerce-textbook.com)). Managerial issues are also provided at the end of each chapter.

### Experienced Coauthors and Contributors

In contrast to other EC books written by one or two authors who claim to be polymaths, we have a diversified global team of authors who are experts in a variety of fields, including an expert on e-marketing and a senior consultant of an e-commerce-related company. All contributions were copyedited to assure quality and uniformity.

### Real-World Orientation

Extensive, vivid examples from large corporations, small businesses from different industries and services, governments, and nonprofit agencies from all over the world make concepts come alive. These examples, which were collected by both academicians and practitioners, show the students the capabilities of EC, its cost and justification, and the innovative ways corporations are using EC in their operations.

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## **Solid Theoretical Background and Research Suggestions**

Throughout the book, we present the theoretical foundations necessary for understanding EC, ranging from consumer behavior to the economic theory of competition. Furthermore, we provide many website resources, numerous exercises, and extensive references and links to supplement the theoretical resources.

## **Most Up-to-Date and Current Topics**

This book presents the most current topics relating to EC, as evidenced by the many citations from 2015, 2016, and 2017. Finally, we introduce some of the most promising newcomer companies to e-commerce such as Instagram, Line, Waze, Volusion, Uber, Airbnb, and Shopify.

## **Social Media and Commerce**

In addition to the two full chapters on this topic, we present EC social media and commerce topics in all chapters.

## **Integrated Systems**

In contrast to other EC books that highlight isolated Internet-based systems, we emphasize integrated systems that support the entire life cycle of e-commerce. Social network-based systems are also highlighted, as are the latest developments in global EC, mobile commerce, and mobile apps.

## **Global Perspective**

The importance of global competition, partnerships, and trade is increasing rapidly. EC facilitates exporting and importing, the management of multinational companies, and electronic trading and payments around the globe. International examples are provided throughout the book. The world's largest e-commerce company, the Alibaba Group, is featured in Chap. 4. Our authors and contributors are from the United States, Macau (China), Korea, Taiwan, Brazil, and the Philippines. Examples and cases presented are from over 20 countries. Cross-border EC is discussed in several chapters, including money transfers.

## **Small- and Middle-Sized Companies**

Throughout the book, we provide discussions and examples of small- and middle-sized companies in addition to the large ones.

## **The Public Sector**

In numerous places, we cover the topic of e-commerce in governments and other public and not-for-profit organizations. We added the use of AI-based systems in these organizations.

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## Interdisciplinary Approach

e-Commerce is interdisciplinary in nature, and we illustrate this throughout the book. Major EC-related disciplines include accounting, finance, information systems, marketing, management, operations management, and human resources management. In addition, some nonbusiness disciplines are touched upon, especially public administration, computer science, sociology, engineering, psychology, political science, and law. Economics also plays a major role in the understanding of EC.

## EC Failures and Lessons Learned

In addition to EC success stories, we also present EC failures and, wherever possible, analyze the causes of those failures with lessons learned (e.g., in the opening case to Chap. 16).

## Online Tutorials

We provide five technology-related online tutorials (instead of 12 in EC2012).

The following tutorials are not related to any specific chapter. They cover the essentials of EC technologies and provide a guide to relevant resources:

T1—eCRM

T2—EC technology: EDI, Extranet, RFID, and cloud computing

T3—business intelligence and analytics, data, text, and Web mining

T4—competition in cyberspace.

T5—e-collaboration

The tutorials are available at [affordable-ecommerce-textbook.com](http://affordable-ecommerce-textbook.com).

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## User-Friendliness

While covering all major EC topics, this book is clear, simple, and well organized. It provides all the basic definitions of terms as well as logical and conceptual support. Furthermore, the book is easy to understand and is full of real-world examples that keep the reader's interest. Relevant review questions are provided at the end of each section so the reader can pause to digest the new material.

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## Links, Links, Links, and References

In this book, the reader will find several hundred links to useful resources supplementing all topics and providing up-to-date information. Note: With so many links, some may change over time. Also, you will find numerous references (e.g., about 200 in the new Chap. 7).

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## Other Outstanding Features

1. Five to ten topics for individual discussions and seven to twelve class discussion and debate issues are available in each chapter.
2. A class assignment that involves the opening case is available at the end of each chapter.

3. A class assignment that requires watching one or more short videos (3 to 10 min) about a certain technology or a mini case, followed by questions or some other student engagement, is included.
4. Videos related to specific topics are suggested in the text, some related to cases.
5. Over 100 real-world examples on specific topics and subtopics are used.
6. Learning objectives for the entire book are provided in this preface.

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## Organization of the Book

The book is divided into 15 chapters grouped into five parts.

### Part 1: Introduction to e-Commerce and e-Marketplaces

In Part 1, we provide an overview of today's business environment as well as the fundamentals of EC and some of its terminology (Chap. 1). A discussion of electronic markets and their impacts is provided in Chap. 2, where special attention is given to EC mechanisms ranging from traditional shopping carts to social networks. We also introduce augmented reality and crowdsourcing platforms for EC in this chapter.

### Part 2: E-Commerce Applications

In Part 2, we describe EC applications in three chapters. Chapter 3 addresses e-tailing and electronic service industries (e.g., e-travel, e-banking) as they relate to individual consumers. In Chap. 4, we examine the major B2B models, including online auctions, online trading, e-procurement, online marketplaces, and collaborative commerce. In Chap. 5, we present several innovative and emerging applications, such as e-government, e-learning, sharing economy, and P2P. A new section is dedicated to shared economy applications.

### Part 3: Emerging EC Platforms

Chapter 6 explores the developing applications in the world of wireless EC (m-commerce, l-commerce, and pervasive computing). Chapter 7 is new. It introduces the topic of artificial intelligence chatbots, virtual personal assistants, and Internet of things in e-commerce. In Chap. 8, we explore the world of social media marketing and social CRM. Chapter 9 covers enterprise social networks, crowdsourcing, and some social media applications.

### Part 4: EC Support Services

There are four chapters in this part. Chapter 10 is dedicated to online consumer behavior, market research, e-marketing methods, and e-advertising. Chapter 11 begins with a discussion of the need to protect EC systems. It also describes various types of attacks on e-commerce systems and their users, including fraud, and how to minimize these risks through appropriate security protection programs. The chapter also deals with the various aspects of cyberwars. Chapter 12 describes major EC payment issues and methods including mobile payments and digital currencies. Chapter 13 concentrates on order fulfillment, supply chain improvement, the role of 3D printing in mass customization, robots in EC warehousing and fulfillment, and the role of drones in delivery.

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## Part 5: E-Commerce Strategy and Implementation

Chapter 14 discusses the process of EC strategy and strategic issues in implementing EC including justification and cost–benefit analysis and systems acquisitions and developments. The chapter also presents global EC and EC for small businesses. Chapter 15 deals with legal, ethical, and societal issues concentrating on regulatory issues, privacy, and green IT.

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### Learning Aids

The text offers the student a number of learning aids:

- **Chapter Outlines.** A listing of the main headings (“Content”) at the beginning of each chapter provides a quick overview of the major topics covered.
- **Chapter Learning Objectives.** Learning objectives at the beginning of each chapter help students focus their efforts and alert them to the important concepts to be discussed. Additionally, note the newly added learning objectives for the entire book.
- **Opening Cases.** Each chapter opens with a real-world example that illustrates the importance of EC to modern corporations. These cases were carefully chosen to call attention to some of the major topics to be covered in the chapters. Following each opening case is a short section titled “Lessons Learned from the Case” that relates the important issues in the case to the forthcoming content of the chapter. Finally, questions for the case are provided at the end of each chapter.
- **EC Application Cases.** In-chapter cases highlight real-world problems encountered by organizations as companies develop and implement EC. Questions follow each case to help direct the student’s attention to the implications of the case material. Also, the cases deal with organizational problems and their solutions.
- **Real-World Examples.** Dozens of examples illustrate how EC concepts and tools are applied. These are usually linked to detailed descriptions and sources.
- **Figures and Tables.** Numerous eye-catching figures and tables extend and supplement the text presentation.
- **Review Questions.** Each section in each chapter ends with a series of review questions about that particular section. These questions are intended to help students summarize the concepts introduced and digest the essentials of each section before moving on to another topic.
- **Glossary and Key Terms.** Each key term is defined in the text when it first appears. In addition, an alphabetical glossary of key terms appears at the end of the book, with a page reference to the location where the term is discussed.
- **Managerial Issues.** At the end of every chapter, we explore some of the special concerns managers face as they prepare to do business in cyberspace. These issues are framed as questions to maximize the readers’ active participation.
- **Chapter Summary.** The chapter summary is linked one-to-one with the learning objectives introduced at the beginning of each chapter.
- **End-of-Chapter Exercises.** Different types of questions measure the students’ comprehension and their ability to apply the learned knowledge. Discussion Questions by individual students are intended to challenge them to express their thinking about relevant topics. Topics for Class Discussion and Debates promote dialogs and develop critical thinking skills. Internet Exercises are challenging assignments that require students to surf the Internet and apply what they have learned. Over 250 hands-on exercises send students to interesting websites to conduct research, learn about applications, download demos, or research state-of-the-art technology. The Team Assignments and Projects are thought-provoking group projects designed to foster teamwork.
- **Closing Cases.** Each chapter ends with a comprehensive case, which is presented somewhat more in depth than the in-chapter EC application cases. Questions follow each case relating the case to the topics covered in the chapter.

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## Supplementary Materials

The following support materials are also available:

- The **Instructor's Manual**, written by Jon Outland, includes answers to all review and discussion questions, exercises, and case questions.
- **Test bank** which was prepared by Jon Outland is available to support this text.
- The **PowerPoint Lecture Notes** highlight the important areas and are related to the text learning objectives. These are initially prepared by Judy Whiteside and updated to this edition by Jon Outland.

## Companion Website: [affordable-ecommerce-textbook.com](http://affordable-ecommerce-textbook.com)

The book is supported by a companion website that includes:

- Five online tutorials

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## Content Contributors

The following individuals contributed material for this edition:

- Linda Lai provides material to Chaps. 8 and 14.
- Fabio Cipriani contributed his eCRM and social CRM slides to Chaps. 1 and 8.
- Judy Whiteside updated material in several chapters and conducted supporting research.
- Ivan C. Seballos II contributed the new illustrations and helped in updating several chapters.

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## Acknowledgments

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## Reviews

The previous editions of the book were reviewed by many professors. We thank all of them.

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Rapid City, SD, USA  
Scottsdale, AZ, USA  
Seodaemun-gu, Seoul, Korea  
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# Contents

## Part I Introduction to E-Commerce and E-Marketplaces

<b>1 Overview of Electronic Commerce</b> . . . . .	3
Opening Case: How Starbucks Is Changing to a Digital and Social Enterprise. . . . .	4
1.1 Electronic Commerce: Definitions and Concepts . . . . .	7
Defining Electronic Commerce . . . . .	7
Defining e-Business . . . . .	7
Major EC Concepts . . . . .	7
Electronic Markets and Networks . . . . .	8
1.2 The Electronic Commerce Field: Growth, Content, Classification, and a Brief History . . . . .	8
The Content and Framework of e-Commerce . . . . .	8
An EC Framework . . . . .	9
Classification of EC by the Nature of the Transactions and the Relationships Among Participants . . . . .	9
A Brief History of EC . . . . .	12
Case 1.1: EC Application Net-a-Porter: Dress for Success . . . . .	13
The Opportunity. . . . .	13
The Solution. . . . .	13
The Results. . . . .	14
1.3 Drivers and Benefits of e-Commerce. . . . .	15
The Drivers of e-Commerce . . . . .	15
The Benefits of e-Commerce . . . . .	15
1.4 Social Computing and Commerce . . . . .	17
Social Computing . . . . .	17
Web 2.0 . . . . .	17
Social Media . . . . .	17
Social Networks and Social Networking Services. . . . .	18
Enterprise Social Networks . . . . .	18
The Major Tools of Web 2.0 . . . . .	20
1.5 The Digital and Social Worlds: Economy, Enterprises, and Society . . . . .	20
The Digital Economy . . . . .	20
The Digital Enterprise . . . . .	21
The Social Business (Enterprise) . . . . .	22
The Digital Revolution and Society. . . . .	23
Some Impacts of the Digital and Social Worlds . . . . .	24
1.6 Electronic Commerce Business Models . . . . .	25
The Structure and Properties of Business Models . . . . .	26
Typical EC Business Models . . . . .	28
Classification of Business Models in e-Commerce . . . . .	28

1.7	The Limitations, Impacts, and the Future of e-Commerce . . . . .	29
	The Limitations and Barriers of EC . . . . .	29
	Why Study e-Commerce? . . . . .	30
	The Future of EC . . . . .	30
1.8	Overview of This Book . . . . .	31
	Part I: Introduction to e-Commerce and e-Marketplaces. . . . .	31
	Part II: EC Applications. . . . .	31
	Part III: Emerging EC Delivery Platforms. . . . .	31
	Part IV: EC Support Services. . . . .	32
	Part V: EC Strategy and Implementation. . . . .	32
	Online Mini Tutorials. . . . .	32
	Managerial Issues . . . . .	33
	Summary . . . . .	33
	Closing Case: e-Commerce at the National Football League (NFL) . . . . .	36
	References. . . . .	38
<b>2</b>	<b>E-Commerce: Mechanisms, Platforms, and Tools</b> . . . . .	<b>41</b>
	Opening Case: Pinterest: A New Kid on the E-Commerce Block . . . . .	42
2.1	Electronic Commerce Mechanisms: An Overview . . . . .	44
	EC Activities and Support Mechanisms . . . . .	44
	The Online Purchasing Process . . . . .	44
2.2	E-Marketplaces . . . . .	44
	Electronic Markets . . . . .	45
	The Components and Participants in E-Marketplaces . . . . .	46
	Disintermediation and Reintermediation . . . . .	47
	Case 2.1: EC Application Blue Nile Inc.: Change and Adaptation in the Online Jewelry Industry . . . . .	47
	Changing the Industry . . . . .	47
	Adapting to the Market . . . . .	47
	Types of E-Marketplaces . . . . .	48
2.3	Customer Shopping Mechanisms: Webstores, Malls, and Portals. . . . .	49
	Webstores . . . . .	49
	Electronic Malls. . . . .	49
	Web (Information) Portals . . . . .	49
	The Roles and Value of Intermediaries in E-Marketplaces . . . . .	51
2.4	Merchant Solutions: Electronic Catalogs, Search Engines, and Shopping Carts . . . . .	51
	Electronic Catalogs . . . . .	51
	EC Search Activities, Types, and Engines . . . . .	52
	Shopping Carts. . . . .	53
2.5	Auctions, Bartering, and Negotiating Online . . . . .	54
	Definition and Characteristics . . . . .	54
	Dynamic Pricing . . . . .	54
	Traditional Auctions Versus E-Auctions . . . . .	54
	Types of Auctions . . . . .	55
	Benefits of E-Auctions. . . . .	56
	Limitations of E-Auctions . . . . .	57
	Online Bartering. . . . .	57
	Online Negotiating. . . . .	58
2.6	Virtual Communities and Social Networks . . . . .	58
	Characteristics of Traditional Online Communities and Their Classification . . . . .	58
	Social Networking Service (Sites). . . . .	59
	Business-Oriented Public Social Networks . . . . .	60

Case 2.2: EC Application Craigslist: The Ultimate Online-Classified Community . . .	61
Concerns About Craigslist . . . . .	61
Private (or Enterprise) Social Networks . . . . .	62
Business Models and Services Related to Social Networking . . . . .	62
Mobile Social Commerce . . . . .	62
Mobile Social Networking . . . . .	62
Recent Innovative Tools and Platforms for Social Networking . . . . .	63
2.7 Emerging EC Platforms: Augmented Reality and Crowdsourcing . . . . .	64
Augmented Reality . . . . .	64
Crowdsourcing . . . . .	65
2.8 The Future: Web 3.0, Web 4.0, and Web 5.0 . . . . .	67
The Technological Environment . . . . .	69
Managerial Issues . . . . .	69
Summary . . . . .	70
Closing Case: Driving Customer Engagement with Augmented Reality at Tesco . . . . .	74
References . . . . .	75

## Part II E-Commerce Applications

<b>3 Retailing in Electronic Commerce: Products and Services . . . . .</b>	<b>79</b>
Opening Case: Amazon.com—E-Commerce Innovator . . . . .	80
3.1 Internet Marketing and B2C Electronic Retailing . . . . .	82
Overview of Electronic Retailing . . . . .	82
Size and Growth of the B2C Market . . . . .	82
Characteristics and Advantages of Successful E-Tailing . . . . .	83
3.2 E-Tailing Business Models . . . . .	85
Classification of Models by Distribution Channel . . . . .	85
Referring Directories . . . . .	87
Malls with Shared Services . . . . .	87
Other B2C Models and Special Retailing . . . . .	87
B2C Social Shopping . . . . .	88
Drop-Shipping . . . . .	88
3.3 Online Travel and Tourism (Hospitality) Services . . . . .	91
Characteristics of Online Travel . . . . .	91
Case 3.1: EC Application . . . . .	93
Benefits, Limitations, and Competition in Online Travel Services . . . . .	93
Competition in Online Travel . . . . .	93
Corporate Travel . . . . .	94
3.4 Employment and the Online Job Market . . . . .	94
The Internet Job Market . . . . .	94
Benefits and Limitations of the Electronic Job Market . . . . .	96
3.5 Online Real Estate, Insurance, and Stock Trading . . . . .	97
Real Estate Online . . . . .	97
Insurance Online . . . . .	97
Online Stock Trading and Investments . . . . .	98
3.6 Online Banking and Personal Finance . . . . .	99
E-Banking . . . . .	99
Online Banking Capabilities . . . . .	99
Pure Virtual Banks . . . . .	100
Case 3.2: EC Application . . . . .	100
Online Billing and Bill Paying . . . . .	101

3.7	On-Demand Delivery of Products, Digital Items, Entertainment, and Gaming . . .	102
	On-Demand Delivery of Products . . . . .	102
	Online Delivery of Digital Products, Entertainment, and Media. . . . .	103
	Internet TV and Internet Radio . . . . .	104
	Social Television (TV). . . . .	104
	Legal Aspects. . . . .	105
3.8	Online Purchasing Decision Aids . . . . .	106
	Shopping Portals . . . . .	106
	Price and Quality Comparison by Shopbot Software Agents . . . . .	106
	Ratings, Reviews, and Recommendation Sites . . . . .	106
	Comparison Shopping Websites . . . . .	107
	Social Network Influence. . . . .	107
	Trust Verification Sites. . . . .	107
	Other Shopping Assisting Tools. . . . .	108
	Aggregators . . . . .	109
3.9	The New Face of Retail Competition: Retailers Versus E-Tailers. . . . .	109
	The Online Versus Offline Competition: An Overview. . . . .	109
	Retailers Versus E-Tailers . . . . .	110
	Convergence and Omnichannel. . . . .	110
	Examples of Click-and-Brick Retailers. . . . .	111
	What Can Traditional Retailers Do? . . . . .	111
3.10	Issues in E-Tailing and Lessons Learned. . . . .	112
	Disintermediation and Reintermediation. . . . .	112
	Channel Conflict . . . . .	113
	Product and Service Customization and Personalization. . . . .	113
	Lessons Learned from Failures and Lack of Success of E-Tailers . . . . .	114
	Managerial Issues . . . . .	114
	Summary. . . . .	115
	Closing Case: Etsy—A Social-Oriented B2C Marketplace . . . . .	120
	References. . . . .	121
<b>4</b>	<b>Business-to-Business E-Commerce . . . . .</b>	<b>123</b>
	Opening Case: Alibaba.Com—The World’s Largest B2B Marketplace. . . . .	124
4.1	Concepts, Characteristics, and Models of B2B E-Commerce . . . . .	126
	Basic B2B Concepts and Process . . . . .	126
	The Basic Types of B2B Transactions and Activities . . . . .	127
	The Basic Types of B2B E-Marketplaces and Services. . . . .	128
	Market Size and Content of B2B. . . . .	128
	B2B Components . . . . .	130
	Online Service Industries in B2B . . . . .	131
	The Benefits and Limitations of B2B . . . . .	132
4.2	B2B Marketing: Sell-Side E-Marketplaces . . . . .	133
	Sell-Side Models . . . . .	133
	Sales from Catalogs: Webstores. . . . .	133
	Comprehensive Sell-Side Systems . . . . .	134
	Selling Via Distributors and Other Intermediaries. . . . .	135
4.3	Selling Via E-Auctions. . . . .	135
	The Benefits of Auctions on the Sell Side . . . . .	135
	Auctioning from the Company’s Own Site . . . . .	136
	Using Intermediaries in Auctions. . . . .	136
	Examples of B2B Forward Auctions . . . . .	136
4.4	One-From-Many: E-Procurement at Buy-Side E-Marketplaces . . . . .	137
	Inefficiencies in Traditional Procurement Management . . . . .	137
	Procurement Methods . . . . .	138

	E-Procurement Concepts . . . . .	139
	The Benefits and Limitations of E-Procurement . . . . .	139
4.5	Reverse Auctions at Buy -Side E-Marketplaces (E-Tendering). . . . .	141
	The Major Benefits of Reverse Auctions. . . . .	141
	Conducting Reverse Auctions . . . . .	142
Case 4.1:	EC Application Amazon Enters the B2B Market . . . . .	142
4.6	Other E-Procurement Methods . . . . .	144
	Desktop Purchasing . . . . .	144
	Group Purchasing. . . . .	144
	Buying from Other Sources . . . . .	145
	Acquisition Via Electronic Bartering. . . . .	145
	Selecting an Appropriate E-Procurement Solution . . . . .	146
4.7	B2B Exchanges (E-Marketplaces): Definitions and Concepts . . . . .	146
	Global Exchanges . . . . .	146
	Functions of and Services Provided by Exchanges . . . . .	146
	Ownership of B2B Exchanges. . . . .	148
	Dynamic Pricing in B2B Exchanges . . . . .	149
	Advantages, Limitations, and the Revenue Model of Exchanges . . . . .	149
4.8	B2B in Web 2.0 and Social Networking . . . . .	150
	E-Communities in B2B . . . . .	150
	The Opportunities of Social Commerce in B2B . . . . .	151
	The Use of Web 2.0 Tools in B2B . . . . .	151
	Virtual Trade Shows and Trade Fairs. . . . .	152
	Social Networking in B2B. . . . .	152
	Examples of Other Activities of B2B Social Networks. . . . .	153
	The Future of B2B Social Networking . . . . .	153
	Convergence of B2B, B2C, and Social Networking . . . . .	153
Case 4.2:	EC Application: E-Procurement in Healthcare . . . . .	153
4.9	Collaborative Commerce . . . . .	155
	Essentials of Collaborative Commerce . . . . .	155
	The Elements and Processes of C-Commerce . . . . .	155
	Collaboration Hubs . . . . .	155
	Improving Collaborative Commerce . . . . .	155
	Representative Examples of Collaborative Commerce . . . . .	156
	Social Collaboration. . . . .	158
	Barriers to C-Commerce . . . . .	158
	Managerial Issues . . . . .	158
	Summary. . . . .	160
	Closing Case: Maybelline Uses Collaborative Commerce to Manage Distribution . . . . .	164
	References. . . . .	165
<b>5</b>	<b>Innovative EC Systems: From E-Government to E-Learning, E-Health, Sharing Economy, and P2P Commerce.</b> . . . . .	<b>167</b>
	Opening Case: E-Government in Estonia. . . . .	167
5.1	Digital Government: An Overview . . . . .	169
	Definition and Scope . . . . .	169
	Government-to-Citizens. . . . .	170
	Government-to-Business . . . . .	172
	Government-to-Government . . . . .	173
	Government-to-Employees and Internal Efficiency and Effectiveness. . . . .	173
	Implementing E-Government . . . . .	174
	The Transformation to E-Government. . . . .	174

	E-Government 2.0 and Social Media and Networking . . . . .	174
	M-Government. . . . .	175
	Cutting-Edge Technologies in e-Government . . . . .	176
5.2	E-Learning, E-Training, and E-Books . . . . .	177
	The Basics of E-Learning: Definitions and Concepts . . . . .	177
	Benefits and Drawbacks of E-Learning . . . . .	178
	Distance Learning and Online Universities . . . . .	180
	Online Corporate Training . . . . .	181
	Social Networks and E-Learning . . . . .	182
	Some Recent Technology Support of E-Learning . . . . .	182
	Visual Interactive Simulation. . . . .	182
	E-Learning Management Systems . . . . .	183
	Electronic Books (E-Books) . . . . .	184
5.3	E-Health . . . . .	186
	Definition . . . . .	186
	Electronic Medical Record Systems (EMR) . . . . .	187
	Doctors' System . . . . .	187
	Patient Services . . . . .	187
	Social Media and Commerce . . . . .	187
	Medical Devices and Patient Surveillance . . . . .	187
	Medical Research . . . . .	188
	Administrative Purposes . . . . .	188
5.4	Digital Disruption and Sharing Economy Models:	
	Ride and Accommodation Sharing . . . . .	188
	Digital Disruption: An Introduction . . . . .	188
	Sharing Economy . . . . .	189
	Ride (Transportation) Sharing . . . . .	189
	Accommodation Sharing . . . . .	190
5.5	Person-to-Person Electronic Commerce Models . . . . .	190
	E-Commerce: P2P Applications . . . . .	191
	Case 5.1: EC Application The Lending Club Corp. . . . .	191
	Case 5.2: EC Application Airbnb: An E-Commerce Disruption in the Hospitality Industry . . . . .	193
	Managerial Issues . . . . .	195
	Summary . . . . .	195
	Closing Case: Henry Ford Health System Provides Superior Patient Experience Using It and E-Commerce . . . . .	199
	References . . . . .	200

### Part III Emerging EC Platforms

<b>6</b>	<b>Mobile Commerce and the Internet of Things . . . . .</b>	<b>205</b>
	Opening Case: Hertz Goes Mobile All the Way . . . . .	206
6.1	Mobile Commerce: Concepts, Landscape, Attributes, Drivers, Applications, and Benefits . . . . .	207
	Basic Concepts, Magnitude, and the Landscape . . . . .	208
	The Attributes of M-Commerce . . . . .	209
	An Overview of the Applications of M-Commerce . . . . .	210
	The Benefits of M-Commerce . . . . .	211
	Mobile Commerce Trends . . . . .	212
6.2	The Enabling Infrastructure: Components and Services of Mobile Computing . . . . .	213
	Overview of Mobile Computing . . . . .	213
	Mobile Devices . . . . .	213

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	Mobile Computing Software and Services . . . . .	214
	Voice-Support Services . . . . .	215
	Mobile Apps. . . . .	216
	Putting It All Together . . . . .	216
6.3	Mobile Banking and Financial Applications . . . . .	217
	Mobile Banking . . . . .	217
	Internet-Only Banks. . . . .	218
	Using Cutting Edge Technologies in Mobile Banking . . . . .	218
	Other Mobile Finance Applications . . . . .	218
6.4	Mobile Enterprise Solutions: From Supporting the Workforce to Improving Internal Operations. . . . .	219
	Defining Mobile Enterprise (Enterprise Mobility) . . . . .	219
	The Framework and Content of Mobile Enterprise Applications . . . . .	220
	Mobile Workers . . . . .	220
	Other Enterprise Mobile Applications . . . . .	220
	Trends for 2015 And Beyond. . . . .	221
6.5	Mobile Entertainment, Gaming, Consumer Services, and Mobile Marketing . . . . .	221
	Overview of Mobile Entertainment . . . . .	221
	Mobile Streaming Music and Video Providers . . . . .	222
	Entertainment in Cars . . . . .	222
	Mobile Games . . . . .	222
	Mobile Gambling . . . . .	223
	Mobility and Sports . . . . .	223
	Service Industry Consumer Applications. . . . .	224
	Mobile Marketing: Shopping and Advertising . . . . .	225
	Mobile Shopping . . . . .	225
	Mobile Advertising . . . . .	226
6.6	Location-Based Commerce . . . . .	227
	Basic Concepts in L-Commerce . . . . .	227
	L-Commerce Infrastructure . . . . .	227
	Barriers to Location-Based M-Commerce. . . . .	232
	The Viability of LBC. . . . .	232
6.7	Ubiquitous (Pervasive) Computing . . . . .	232
	Overview of Ubiquitous Computing . . . . .	232
	From Theory to Practice . . . . .	233
	Implementation Issues in Ubiquitous Computing . . . . .	234
6.8	Wearable Computing and Smart Gadgets: Watches, Fitness Trackers, and Smart Glasses . . . . .	235
	Wearable Computing Applications and Devices . . . . .	235
	Enterprise Wearables . . . . .	235
	Smartwatches . . . . .	236
	Fitness (Activity) Trackers. . . . .	236
	Digital (Smart) Glasses . . . . .	236
6.9	Implementation Issues in Mobile Commerce: From Security and Privacy to Barriers to M-Commerce. . . . .	237
	M-Commerce Security and Privacy Issues . . . . .	238
	Technological Barriers to M-Commerce . . . . .	238
	Failures in Mobile Computing and M-Commerce. . . . .	238
	Ethical, Legal, Privacy, and Health Issues in M-Commerce . . . . .	239
	Enterprise Mobility Management . . . . .	239

Managerial Issues . . . . .	240
Summary . . . . .	241
Closing Case: Can Uber Continue to Grow in an Evolving Market? . . . . .	244
References . . . . .	246
<b>7 Intelligent (Smart) E-Commerce . . . . .</b>	<b>249</b>
Opening Case: INRIX Solves Transportation Problems . . . . .	249
7.1 Introduction to Intelligent E-Commerce . . . . .	251
An Overview of Intelligent E-Commerce . . . . .	251
7.2 The Essentials of Artificial Intelligence . . . . .	253
Artificial Intelligence (AI): Definitions and Characteristics . . . . .	253
The Content of the AI Field . . . . .	253
Chatbots . . . . .	256
7.3 Recent AI Applications in E-Commerce . . . . .	258
The AI Contribution to E-Commerce . . . . .	258
AI in E-Commerce: Some Illustrative Examples . . . . .	258
7.4 Knowledge (Expert) Systems . . . . .	260
An Overview of Knowledge Management . . . . .	260
Knowledge Management Types and Activities . . . . .	260
Knowledge Sharing . . . . .	261
How Is Knowledge Management Related to E-Commerce? . . . . .	261
KM and Social Networks . . . . .	262
Expert Systems . . . . .	262
Knowledge-Based System . . . . .	263
Case 7.1: EC Application Allstate Is Using Knowledge Systems . . . . .	264
7.5 Intelligent Personal Assistants and Robot Advisers . . . . .	265
Amazon's Alexa . . . . .	265
Apple's Siri . . . . .	267
Other Personal Assistants . . . . .	267
Personal Robots . . . . .	268
Application Case 7.2: EC Application: Autonomous' Personal Robot . . . . .	268
7.6 The Internet of Things and E-Commerce . . . . .	270
The Essentials of IoT . . . . .	270
The Structure of IoT Applications . . . . .	270
The Major Benefits of IoT . . . . .	271
The Drivers of IoT . . . . .	271
How the IoT Works . . . . .	271
Some Issues in Implementing the IoT . . . . .	272
7.7 Selective Demonstrations of IoT in Action . . . . .	273
A Sampler of Existing Applications . . . . .	273
Smart Homes and Appliances . . . . .	274
Smart Cities . . . . .	275
Smart Cars (Self-Driven) . . . . .	276
Managerial Issues . . . . .	276
Summary . . . . .	277
Closing Case: CNH Industrial Uses the Internet of Things to Excel . . . . .	280
References . . . . .	281
<b>8 Social Commerce: Foundations, Social Marketing, and Advertising . . . . .</b>	<b>285</b>
Opening Case: Social Media Wants Your Marketing Dollars . . . . .	285
8.1 Social Commerce: Definitions and Evolution . . . . .	287
Definitions . . . . .	287
The Evolution of Social Commerce . . . . .	287
8.2 The Content of the Social Commerce Field . . . . .	288
The Landscape and Major Components of the Field . . . . .	288

	Social Media Marketing . . . . .	289
	Enterprise 2.0 . . . . .	289
	The Future . . . . .	290
8.3	The Benefits and Limitations of Social Commerce . . . . .	290
	Benefits to Customers . . . . .	291
	Benefits to Retailers . . . . .	291
	Benefits to Other Types of Enterprises . . . . .	292
	The Social Business: An IBM Approach . . . . .	292
	New or Improved Business Models . . . . .	293
	Concerns and Limitations of Conducting Social Commerce . . . . .	293
8.4	Social Shopping: Concepts, Benefits, and Models . . . . .	294
	Definitions and Drivers of Social Shopping . . . . .	294
	Traditional E-Commerce Sites with Social Media Additions . . . . .	296
	The Major Types and Models of Social Shopping . . . . .	296
Case 8.1:	EC Application Polyvore A Trendsetter in Social Shopping . . . . .	298
	Other Innovative Models . . . . .	299
	Social Shopping Aids: From Recommendations to Reviews, Ratings, and Marketplaces . . . . .	300
	Other Shopping Aids and Services . . . . .	302
	Social Marketplaces and Direct Sales . . . . .	303
	Shopping for Virtual Goods in a Virtual Economy . . . . .	304
	Real-Time Online Shopping . . . . .	305
	Social Shopping in the Near Future . . . . .	305
8.5	Social Advertising: From Viral Advertising to Microblogging and Other Promotions . . . . .	305
	Social ads and Social Apps . . . . .	306
	Viral (Word-of-Mouth) Marketing and Social Networking . . . . .	306
	Using YouTube and Other Social Presentation Sites for Advertising . . . . .	307
	Using Twitter as an Advertising and Marketing Tool . . . . .	307
	Using Facebook for Advertising . . . . .	308
	Using LinkedIn . . . . .	308
	Other Innovative Ways to Advertise in Social Media . . . . .	308
8.6	Social Customer Service and CRM . . . . .	310
	How Does Social Networking Empower Customers? . . . . .	310
	Social CRM . . . . .	310
	How to Serve the Social Customers . . . . .	311
	The Benefits of Social CRM . . . . .	312
Case 8.2:	EC Application iRobot Uses Social Media for Multichannel CRM . . . . .	313
	The Evolution of Social CRM . . . . .	314
	Multidimensional Presentation SCRM . . . . .	314
	Examples of Implementation of Social Customer Service and CRM . . . . .	314
	Reputation Management System . . . . .	317
	Managerial Issues . . . . .	317
	Summary . . . . .	318
	Closing Case: How Sony Uses Social Media for Improving CRM . . . . .	321
	References . . . . .	322
<b>9</b>	<b>Social Enterprise and Other Social Commerce Topics . . . . .</b>	<b>325</b>
	Opening Case: Maximizing the Impact of Social Media with a Minimum of Effort in Mortgage Lending . . . . .	326
9.1	Social Business and Social Enterprise . . . . .	327
	Definitions: Social Business and Social Enterprise . . . . .	327
	Business Networks . . . . .	328

The Benefits and Limitations of Enterprise Social Networking . . . . .	329
How Web 2.0 Tools Are Used by Enterprises . . . . .	330
9.2 Business-Oriented Public Social Networking . . . . .	331
Entrepreneur Networks . . . . .	332
9.3 Enterprise Social Networks . . . . .	332
Taxonomy of Social Enterprise Applications . . . . .	333
How Enterprise Social Networking Helps Employees and Organizations . . . . .	334
Support Services for Enterprise Social Networks . . . . .	334
How Companies Interface with Social Networking . . . . .	335
Patterns and Speed of Adoption. . . . .	336
9.4 Social Network-Based Job Markets. . . . .	337
Social Recruiting . . . . .	337
Virtual Job Fairs and Recruiting Events . . . . .	338
Social Network Privacy and Job Search . . . . .	338
9.5 Social Entertainment . . . . .	339
Entertainment and Social Networks. . . . .	339
Multimedia Presentation and Sharing Sites . . . . .	340
9.6 Social Games and Gamification. . . . .	341
Games on Social Networks . . . . .	341
The Business Aspects of Social Games. . . . .	342
Case 9.1: EC Application Pokémon GO . . . . .	342
Educational Social Games . . . . .	343
Gamification. . . . .	343
9.7 Crowdsourcing and Crowdfunding . . . . .	344
Crowdsourcing as a Distributed Problem-Solving Enabler. . . . .	344
The Process of Crowdsourcing . . . . .	345
Successfully Deployed Crowdsourcing Systems: Some Representative Examples . . . . .	345
Case 9.2: EC Application Kickstarter. . . . .	346
Tools for Crowdsourcing . . . . .	347
9.8 Social Collaboration (Collaboration 2.0). . . . .	348
Essentials of Social Collaboration . . . . .	348
The Future of Social Commerce . . . . .	351
Managerial Issues . . . . .	352
Summary . . . . .	352
Closing Case: LinkedIn—The Premier Public Business-Oriented Social Network . . . . .	355
References. . . . .	357

## Part IV EC Support Services

<b>10 Marketing and Advertising in E-Commerce . . . . .</b>	<b>361</b>
Opening Case: IKEA Uses Mobile and Augmented Reality . . . . .	361
10.1 Online Consumer Behavior . . . . .	362
A Model of Online Consumer Behavior . . . . .	363
The Major Influential Factors . . . . .	364
Enhancing Customer Loyalty . . . . .	365
10.2 Personalization and Behavioral Marketing . . . . .	365
Personalization in E-Commerce . . . . .	366
Case 10.1: EC Application Using AI at The North Face . . . . .	367
Behavioral Marketing and Collaborative Filtering . . . . .	368

Case 10.2: EC Application Netflix Uses Technical and Social Systems so You Can Find Something to Watch . . . . .	369
10.3 Market Research for E-Commerce . . . . .	370
Objectives and Concepts of Online Market Research . . . . .	370
Representative Market Research Approaches . . . . .	371
Limitations of Online Market Research and How to Overcome Them . . . . .	374
Biometric and Smartphone Marketing Helps Market Research . . . . .	374
10.4 Why Web Advertising . . . . .	375
Overview of Web Advertising . . . . .	375
Basic Internet Advertising Terminology . . . . .	376
Why Internet Advertising? . . . . .	376
10.5 Online Advertising Methods . . . . .	377
Major Categories of Ads . . . . .	377
Banners . . . . .	378
Pop-Up and Similar-Type Ads . . . . .	378
Search Engine Advertisement and Optimization . . . . .	380
Google: The Online Advertising King . . . . .	381
Augmented Reality in Advertising . . . . .	385
Advertising in Chat Rooms and Forums . . . . .	385
Case 10.3: EC Application Supporting Marketing Campaigns with Software Systems . . . . .	386
10.6 Mobile Marketing and Advertising . . . . .	387
Mobile Marketing and Mobile Commerce . . . . .	387
Mobile Marketing Implementation Guidelines . . . . .	389
Tools to Support Mobile Advertisement . . . . .	389
Mobile Ad Trends . . . . .	390
Marketing Through Apps . . . . .	390
10.7 Advertising Strategies and Promotions . . . . .	391
Permission Advertising . . . . .	391
Other Advertising Strategies . . . . .	391
Localization in Advertising . . . . .	392
Developing an Online Advertising Plan . . . . .	393
Managerial Issues . . . . .	394
Summary . . . . .	395
Closing Case: Rolex Uses New Media Marketing . . . . .	399
References . . . . .	400
<b>11 E-Commerce Security and Fraud Issues and Protections . . . . .</b>	<b>403</b>
Opening Case: Kansas Heart Hospital Becomes a Victim to Ransom . . . . .	404
11.1 The Information Security Problem . . . . .	405
What Is EC Security? . . . . .	405
Security Risks in Mobile Devices . . . . .	407
Cyberwars and Cyberespionage Across Borders . . . . .	407
The Drivers of EC Security Problems . . . . .	408
The Darknet and the Underground Economy . . . . .	410
11.2 Basic E-Commerce Security Issues and Landscape . . . . .	410
Basic Security Terminology . . . . .	411
The EC Security Battleground . . . . .	411
The Threats, Attacks, and Attackers . . . . .	411
The Targets of the Attacks in Vulnerable Areas . . . . .	413
EC Security Requirements . . . . .	414
The Defense: Defenders, Strategy, and Methods . . . . .	415
11.3 Technical Malware Attack Methods: From Viruses to Denial of Service . . . . .	416

	Technical and Nontechnical Attacks: An Overview . . . . .	416
	The Major Technical Attack Methods . . . . .	416
	Malware (Malicious Software): Viruses, Worms, and Trojan Horses . . . . .	416
	Mirai (Malware) . . . . .	419
11.4	Nontechnical Methods: From Phishing to Spam and Fraud . . . . .	420
	Social Engineering and Fraud . . . . .	421
	Social Phishing. . . . .	421
	Fraud and Scams on the Internet . . . . .	423
	Top 10 Attacks and Remedies . . . . .	424
	Identity Theft and Identify Fraud. . . . .	425
	Cyber Bank Robberies. . . . .	425
	Ransomware. . . . .	425
	Spam Attacks . . . . .	427
	Spyware . . . . .	427
	Social Networking Makes Social Engineering Easy . . . . .	427
	Data Breach (Leak) . . . . .	428
11.5	The Information Assurance Model and Defense Strategy . . . . .	429
	Confidentiality, Integrity, and Availability . . . . .	429
	Authentication, Authorization, and Nonrepudiation . . . . .	429
	E-Commerce Security Strategy . . . . .	430
	The Defense Side EC Systems. . . . .	430
11.6	Defending Information Systems and E-Commerce . . . . .	431
	The Defense I: Access Control, Encryption, and PKI . . . . .	431
	The Defense II: Securing E-Commerce Networks . . . . .	434
	The Defense III: General Controls, Spam, Pop-Ups, and Social Engineering Controls . . . . .	435
11.7	Consumer and Seller Protection from Online Fraud . . . . .	438
	Consumer (Buyer) Protection . . . . .	438
	Seller (Merchant) Protection . . . . .	440
	Protecting Marketplaces and Social Networking Services . . . . .	441
	Protecting Both Buyers and Sellers: Using Electronic Signatures and Other Security Features. . . . .	441
11.8	Implementing Enterprisewide E-Commerce Security . . . . .	442
	The Drivers of EC Security Management . . . . .	442
	Senior Management Commitment and Support. . . . .	442
	EC Security Policies and Training . . . . .	443
	EC Risk Analysis and Ethical Issues . . . . .	444
	Why Is It Difficult to Stop Internet Crime? . . . . .	444
	Protecting Mobile Devices and Mobile Apps . . . . .	445
	Managerial Issues . . . . .	446
	Summary . . . . .	446
	Closing Case: How Dyn Was Attacked by DDOS? . . . . .	451
	References. . . . .	452
<b>12</b>	<b>Electronic Commerce Payment Systems. . . . .</b>	<b>457</b>
	Opening Case: Cross-Border EC—Costco Partners with China’s Tmall . . . . .	457
12.1	Changing Retail Landscape . . . . .	461
	Omni-Channel Retail . . . . .	461
	Cash Versus Non-cash Transactions . . . . .	461
	Move to Mobile . . . . .	463
	Implications for EC Payments . . . . .	464
	Critical Mass . . . . .	465
12.2	Using Payment Cards Online. . . . .	466
	Credit Card Reading . . . . .	466

	Processing Cards Online . . . . .	466
	Fraudulent Card Transactions . . . . .	468
12.3	Smart Cards . . . . .	469
	Types of Smart Cards: Contact and Contactless . . . . .	470
	Stored-Value Cards . . . . .	470
	Applications of Smart Cards . . . . .	471
12.4	EC Micropayments . . . . .	473
	Micropayment Models . . . . .	473
	Micropayment Options and Costs . . . . .	474
	Case 12.1: EC Application: Innovative Credit Card Micropayments for the Korean Metropolitan Unified Fare System . . . . .	474
12.5	PayPal and Other Third-Party Payment Gateways . . . . .	476
	PayPal . . . . .	476
	Other Third-Party Gateways . . . . .	477
12.6	Mobile Payments . . . . .	478
	Types of Mobile Payments . . . . .	478
	Mobile Consumer Payments: Wallets, Clouds, and Loops . . . . .	479
	Case 12.2 EC Application Using the Square Magstripe Reader . . . . .	482
12.7	Digital and Virtual Currencies . . . . .	483
	Types of Currencies: Physical and Digital . . . . .	483
	Bitcoin and Other Cryptocurrencies . . . . .	484
	Managerial Issues . . . . .	489
	Summary . . . . .	490
	Closing Case . . . . .	495
	References . . . . .	497
<b>13</b>	<b>Order Fulfillment Along the Supply Chain in e-Commerce . . . . .</b>	<b>501</b>
	Opening Case: How Amazon.Com Fulfills Orders . . . . .	502
13.1	Order Fulfillment and Logistics: An Overview . . . . .	504
	Basic Concepts of Order Fulfillment and Logistics . . . . .	504
	The EC Order Fulfillment Process and Elements . . . . .	505
	Operation Models . . . . .	506
	Order Fulfillment and the Supply Chain . . . . .	506
13.2	Order Fulfillment in Make-to-Order (MTO) and Mass Customization . . . . .	507
	Mass Customization, Make-to-Order, and Assemble-to-Order . . . . .	507
	Case 13.1: EC Application Dell's World-Class Supply Chain and Order Fulfillment System . . . . .	508
	Make-to-Order and Assemble-to-Order . . . . .	510
	Case 13.2: EC Application Feetz Inc. Is Using 3D for Mass Customization in e-Commerce . . . . .	511
13.3	Warehousing, Robots, and Warehouse Management Systems . . . . .	512
	Using Robots (Bots) in Warehouses . . . . .	513
	Warehouse Management System (WMS) . . . . .	514
13.4	Delivery to Customers: From Robots to Drones . . . . .	514
	Speeding Up Deliveries: From Same Day to a Few Hours . . . . .	514
13.5	Problems in Order Fulfillment along Supply Chains . . . . .	517
13.6	Solutions for Order Fulfillment Problems Along the Supply Chain . . . . .	518
	Improvements in the Order-Taking Activity . . . . .	519
	Changing the Structure and Process of the Supply Chain . . . . .	519
	Integrated Global Logistics Program . . . . .	520
	Partnering Efforts and Outsourcing Logistics . . . . .	520
	Supply Chain Segmentation . . . . .	520
13.7	RFID as a key Enabler in Supply Chain Management . . . . .	520
	The Essentials of RFID . . . . .	520

Case 13.3: EC Application: FID Supports Macy’s Multichannel Strategy . . . . .	522
RFID Applications in the Supply Chain Around the Globe . . . . .	523
13.8 Other Order Fulfillment Topics . . . . .	524
Handling Returns (Reverse Logistics) . . . . .	524
Order Fulfillment in B2B . . . . .	525
Order Fulfillment in Services . . . . .	525
Innovative e-Fulfillment Strategies . . . . .	526
Managerial Issues . . . . .	526
Summary . . . . .	527
Closing Case: Cross-Border EC (Partnering with Tmall Global) . . . . .	530
References . . . . .	533

## Part V E-Commerce Strategy and Implementation

<b>14 EC Strategy, Globalization, SMEs, and Implementation . . . . .</b>	<b>537</b>
Opening Case: Telstra Corporation Helps Its Corporate Customers	
Justify EC Initiatives . . . . .	537
14.1 Organizational Strategy: Concepts and Overview . . . . .	539
Strategy and Performance Cycle . . . . .	540
Strategy Initiation . . . . .	541
Strategy Formulation . . . . .	542
Strategy Implementation . . . . .	543
Strategy Assessment . . . . .	544
Performance Improvement and Innovations . . . . .	545
14.2 Why Justify E-Commerce and Social Media Investments?	
How Can They Be Justified? . . . . .	546
Increased Pressure for Financial Justification . . . . .	546
Other Reasons Why EC and Social Media Justification is Needed . . . . .	546
EC Investment Categories and Benefits . . . . .	547
How Is an EC or Social Media Investment Justified? . . . . .	547
What Needs to Be Justified? When Should Justification Take Place? . . . . .	547
Using Metrics in EC and Social Media Justification . . . . .	548
Case 14.1: EC Application Aldi Supermarket Trying E-Commerce	
in the United Kingdom . . . . .	549
Web Analytics . . . . .	550
The Process of Justifying EC and IT Projects . . . . .	550
14.3 A Strategy for Global E-Commerce and Social Media . . . . .	551
Benefits and Extent of Global Operations . . . . .	551
Barriers to Global E-Commerce . . . . .	551
Breaking Down the Barriers to Global E-Commerce . . . . .	554
14.4 Strategy for Small- and Medium-Sized Enterprises . . . . .	555
Case 14.2: EC Application Website Builders . . . . .	556
Globalization and SMEs . . . . .	556
Resources to Support SME Activities in EC and Social Media . . . . .	557
SMEs and Social Networks . . . . .	557
14.5 The Implementation Landscape . . . . .	558
The Major Implementation Factors . . . . .	558
Case 14.3: EC Application E-Commerce Builders . . . . .	559
14.6 Development Strategies for E-Commerce and Social Media Projects . . . . .	560
In-House Development: Insourcing . . . . .	560
Insourcing with Applications or Tools . . . . .	561
Outsourcing Development and Implementation . . . . .	561
Case 14.4: EC Application Would You Build an App Online? . . . . .	562
Selecting a Development Option . . . . .	562

14.7	Opportunities for Success in E-Commerce and Social Media and Avoiding Failure . . . . .	563
	Factors that Determine E-Commerce and Social Media Success . . . . .	563
	E-Commerce and Social Media Successes . . . . .	564
	Cultural Differences in EC and Social Media Successes and Failures . . . . .	565
	Managerial Issues . . . . .	566
	Summary . . . . .	566
	Closing Case: Battle of the B2C Titans . . . . .	569
	References . . . . .	570
<b>15</b>	<b>E-Commerce: Regulatory, Ethical, and Social Environments . . . . .</b>	<b>573</b>
	Opening Case: Fake News: The Austin, Texas, Fiasco. . . . .	574
15.1	Ethical Challenges and Guidelines . . . . .	575
	Ethical Principles and Guidelines . . . . .	575
	Business Ethics . . . . .	575
	EC Ethical and Legal Issues . . . . .	576
15.2	Intellectual Property Law and Copyright Infringement. . . . .	577
	Intellectual Property in E-Commerce . . . . .	577
	Protecting Intellectual Property on Websites . . . . .	579
15.3	Privacy Rights, Protection, and Free Speech . . . . .	580
	Privacy in E-Commerce . . . . .	580
	Social Networks Changing the Landscape of Privacy and Their Protection . . . . .	580
	Privacy Rights and Protection . . . . .	581
	Free Speech Online Versus Privacy Protection . . . . .	582
	The Price of Protecting an Individual's Privacy . . . . .	583
	Case 15.1: EC Application: School Administrators Used Webcams to Spy on Students at Home . . . . .	583
	The Future of ePrivacy. . . . .	583
	How Information About Individuals Is Collected and Used Online . . . . .	583
	Privacy Protection by Information Technologies. . . . .	585
	Privacy Issues in Web 2.0 Tools and Social Networks . . . . .	585
	Privacy Protection by Ethical Principles . . . . .	586
	Privacy Protection in Countries Other Than the United States . . . . .	586
15.4	Other EC Legal Issues . . . . .	587
	Selected Legal and Regulatory Environment: E-Discovery and Cyberbullying . . . . .	587
15.5	Fake Content on the Web . . . . .	590
	Fake News . . . . .	590
	Other Fake Content Types and Activities on the Internet . . . . .	590
	Internet Trolls. . . . .	590
	Difficulties Controlling Fake Content . . . . .	591
	Tips for Analyzing and Dealing with Various Types of Fake News . . . . .	592
15.6	Public Policy, Taxation, and Political Environments. . . . .	593
	Net Neutrality. . . . .	593
	Taxation of EC Transactions in the United States . . . . .	593
	Internet Censorship by Countries. . . . .	594
15.7	Societal Issues and Green EC . . . . .	594
	The Digital Divide . . . . .	595
	Telecommuting . . . . .	595
	Does EC Increase Unemployment? . . . . .	596
	Green EC and IT . . . . .	596
	Other Societal Issues . . . . .	598

15.8	The Future of E-Commerce . . . . .	599
	Some Key Factors for the Future of E-Commerce . . . . .	599
	New Trends That Are Shaping the Future of B2C . . . . .	600
	The Future of B2B . . . . .	600
	Integrating the Marketplace with the Marketspace . . . . .	601
	M-Commerce . . . . .	601
	Social Commerce . . . . .	601
	Future Technological Trends that May Accelerate the Speed of E-Commerce . . . . .	602
	Future Trends That Are Limiting the Spread of EC . . . . .	602
	Consumer Behavior . . . . .	602
	Conclusion . . . . .	602
	Enjoy Some Interesting Videos About the Future of E-Commerce . . . . .	603
	Managerial Issues . . . . .	603
	Summary . . . . .	604
	Closing Case: The Pirate Bay and the Future of File Sharing . . . . .	608
	References . . . . .	610
	<b>Glossary</b> . . . . .	613
	<b>Index</b> . . . . .	625