

---

# 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

---

	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>	<b>613</b>
	<b>Index . . . . .</b>	<b>625</b>



<http://www.springer.com/978-3-319-58714-1>

Electronic Commerce 2018

A Managerial and Social Networks Perspective

Turban, E.; Outland, J.; King, D.; Lee, J.K.; Liang, T.-P.;

Turban, D.C.

2018, XXVIII, 636 p. 90 illus., 75 illus. in color.,

Hardcover

ISBN: 978-3-319-58714-1