

GLOBAL  
EDITION



# E-commerce 2021–2022

*business. technology. society.*

SEVENTEENTH EDITION

Kenneth C. Laudon • Carol Guercio Traver



# E-commerce



business. technology. society.

**GLOBAL EDITION**

**S E V E N T E E N T H E D I T I O N**

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*Authorized adaptation from the United States edition, entitled E-commerce 2021: business. technology. society., 16th edition, ISBN 978-0-13-693180-5, by Kenneth C. Laudon and Carol Guercio Traver, published by Pearson Education © 2022.*

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#### **British Library Cataloguing-in-Publication Data**

A catalogue record for this book is available from the British Library

**ISBN 10:** 1-292-40931-2

**ISBN 13:** 978-1-292-40931-3

**eBook ISBN 13:** 978-1-292-40932-0

Cover Photo: greenbutterfly/Shutterstock

Typeset in ITC New Veljovic Pro Book by Azimuth Interactive, Inc.

eBook formatted by B2R Technologies Pvt. Ltd.

# P R E F A C E

*E-commerce 2021–2022: business. technology. society*, 17th Global Edition, provides you with an in-depth introduction to the field of e-commerce. We focus on key concepts, and the latest empirical and financial data, that will help you understand and take advantage of the evolving world of opportunity offered by e-commerce, which is dramatically altering the way business is conducted and driving major shifts in the global economy. The Global Edition is aimed at students and professionals in the European Union, the Middle East, Asia-Pacific, Australia, and South Africa. Case studies reflect e-commerce firms in these regions, and figures and tables relate to these regional sources wherever possible.

Just as important as our global orientation, we have tried to create a book that is thought-provoking and current. We use the most recent data available, and focus on companies that you are likely to encounter on a daily basis in your everyday life, such as Facebook, Google, Twitter, Amazon, YouTube, Pinterest, eBay, Uber, WhatsApp, Snapchat, and many more that you will recognize, as well as some exciting startups that may be new to you. Global Edition cases include ones that focus on Puma, Canva, Scratch, OVHcloud, Klook, Skyscanner, InMobi, Souq.com, ASOS, Revolut, Spotify, Deezer, Brut, and Alibaba, among others. We also have up-to-date coverage of the key topics in e-commerce today, from privacy and piracy, to government surveillance, cyberwar, fintech, social-local-mobile marketing, Internet sales taxes, intellectual property, and more. You will find here the most up-to-date and comprehensive overview of e-commerce today.

The e-commerce concepts you learn in this book will make you valuable to potential employers. The e-commerce job market is expanding rapidly. Many employers expect new employees to understand the basics of e-commerce, online marketing, and how to develop an e-commerce presence. Every industry today is touched in at least some way by e-commerce. The information and knowledge you find in this book will be valuable throughout your career, and after reading this book, we expect that you will be able to participate in, and even lead, management discussions about e-commerce for your firm.

## WHAT'S NEW IN THE 17TH GLOBAL EDITION

### Careers in E-commerce

In this edition, at the end of every chapter, we feature a section on careers in e-commerce that examines a job posting by an online company for an entry-level position. We provide a brief overview of the field and company, some details about the position, a list of the qualifications and skills that are typically required, and then some tips about how to prepare for an interview, as well as showing how the concepts learned in each chapter can help students answer some possible interview questions.

### Currency

The 17th edition features all new or updated opening, closing, and “Insight on” cases. The text, as well as all of the data, figures, and tables in the book, have been updated

through March 2021 with the latest marketing and business intelligence available from eMarketer, Pew Research Center, Forrester Research, Comscore, Gartner Research, and other industry and government sources.

In addition, we have added new, expanded, and/or updated material on a number of e-commerce topics that have appeared in the headlines during 2020, including the following:

- The significant impact of the Covid-19 pandemic on e-commerce (throughout and also as specifically noted in the following list).
- The expansion of on-demand services such as Uber (including the impact of the Covid-19 pandemic on Uber); challenges that mobile apps pose to the Web's dominance of the Internet ecosphere, including progressive web apps (PWAs); Rocket Internet's startup incubator, the privacy-related challenges facing Facebook (including the recent record-breaking fine and stipulations imposed by the U.S. Federal Trade Commission in the wake of the Cambridge Analytica scandal); and Puma's omni-channel growth strategy (Chapter 1).
- How Canva leveraged a successful business model to grow from a startup to unicorn; OpenRice's social commerce-based business model (new *Insight on Business* case); how startups are using crowdfunding; connected cars as a new platform for e-commerce; Twitter's continued efforts to find a workable business model in the midst of a challenging social and political environment (new end-of-chapter case study) (Chapter 2).
- The impact of the pandemic on Internet infrastructure and whether it could break the Internet (new opening case); edge computing; enhanced versions of various Internet protocols; 5G and new Wi-Fi standards such as Wi-Fi 5 and 6; BLE and the use of Bluetooth for contact tracing apps; increasing tech giant ownership of Internet backbones; increasing concern about the necessity for broadband access heightened by the pandemic (digital divide); new Internet access technologies such as drones, balloons, and white space; developments in IoT including a new *Insight on Business* case focusing on the Internet of Everything (IoE); the increased importance on videoconferencing as a result of the pandemic (new *Insight on Technology* case on Zoom); wearable computing devices such as the Apple Watch; virtual and augmented reality (including new mixed reality devices and applications); artificial intelligence and intelligent assistants (Chapter 3).
- How Australia-based petfood startup Scratch built a successful e-commerce presence from "scratch"; website development tools to quickly develop an e-commerce presence, such as Weebly, Wix, WooCommerce, and Shopify; alternative web development methodologies such as agile development, DevOps, component-based development, and the use of web services (including SOA and microservices); dynamic page generation tools such as DHTML and Node.js, tools for interactivity and active content such as React, Vue, AngularJS, D3, jQuery, and TypeScript; e-commerce personalization tools; increasing focus on online accessibility, including the impact of the latest legal decisions; mobile-first and responsive design tools (including Flutter and React Native); the development of Hong Kong-based Klook's mobile app; Skyscanner's development as a one-stop travel platform (new closing case study).

- Increased security threats from exploit kits, malvertising, ransomware attacks on small and medium-sized businesses, municipal governments and educational institutions, such as the ransomware attack on the University of Maastricht (new opening case); Trojans such as Emotet and Trickbot, cryptojacking, Covid-related phishing scams, Nigerian e-mail and business e-mail compromise (BEC) phishing, zoombombing, data breaches (including at Marriott) and credential stuffing attacks, DDoS attacks, insider attacks, newly discovered software vulnerabilities, social network security issues, smartphone security issues, IoT security issues and software supply chain attacks; technologies for enhanced security including more secure protocols (TLS, HTTPS, and WPA3), multifactor authentication and biometric security techniques, and the use of the zero trust cybersecurity framework; new security legislation; alternative online payment systems; mobile payment systems (proximity and P2P) and technologies (NFC and QR code) including Alipay and WeChat Pay; cryptocurrencies and blockchain technology (Chapter 5).
- InMobi's mobile advertising platform; impact of the Covid-19 pandemic; visual and voice search; ad fraud and viewability issues; new IAB guidelines; updates to Apple's Intelligent Tracking Prevention (ITP); issues with programmatic advertising, including brand safety (Chapter 6).
- Pinterest as a social marketing and social e-commerce platform; influencers and influencer marketing; new social marketing tools from, and campaigns on, Facebook, Twitter, Pinterest, Instagram, TikTok, Snapchat, and LinkedIn; Accuracast's social marketing analytics; social marketing challenges, including advertiser boycotts; growth of 3-D mobile marketing; privacy challenges facing location-based proximity marketing (Chapter 7).
- The right to be forgotten in Europe and the United States; the California Consumer Privacy Act goes into effect; privacy issues associated with facial recognition; impact of EU General Data Protection Regulation (GDPR) and recent invalidation of Privacy Shield; overview of privacy laws in various nations; new technological privacy protections, including new versions of Apple's ITP; privacy as a business; issues with respect to law enforcement and government surveillance including a new *Insight on Technology* case on contact tracing apps and the tension they pose between privacy and public health; updates on DMCA legislation and litigation, including a new lawsuit against the Internet Archive for making digital copies of its entire library widely available during the pandemic; EU copyright legislation; the Supreme Court's *Booking.com* trademark decision; WIPO's domain name dispute resolution process; the EU's Trade Secret Directive; online sales tax developments in the United States and Europe; net neutrality developments; issues with respect to CDA Section 230; online fantasy sports gambling issues; Big Tech and antitrust issues in the United States and Europe, including recent investigations, government lawsuits, and record-breaking fines (Chapter 8).
- Challenges posed by the Covid-19 pandemic for online retail and services, particularly for travel services; updates on Souq.com, Amazon, Airbnb, and OpenTable; growth of digital native verticals (manufacturer-direct); ASOS's use of big data; growth of social e-commerce including Facebook Shops; success of fintech startups (including new *Insight on Business* case on Revolut); growth of social, mobile, and remote recruiting;

updates on on-demand service companies, including Bawiq and Careem in the Middle East (Chapter 9).

- Spotify and Deezer’s streaming services; new *Insight on Society* case on the media habits of Generation Z; industry structure convergence continues; updates on online newspaper industry business models, including Facebook News; native digital news sites such as France’s Brut; Apple News magazine and news aggregation app; update on e-books, including Kindle Unlimited; streaming home entertainment (television and movies) and music services; the impact of Pokemon GO and emergence of e-sports, including a new *Insight on Technology* case on Twitch (Chapter 10).
- LinkedIn in China and Russia; impact of the pandemic on social network usage; new social networks, including TikTok and MeWe; issues involving social network influencers (new *Insight on Society* case); continuing controversy over Facebook algorithms and echo chamber effect; decline in popularity of online auctions; Yahoo Japan and Line merge to create megaportal and super app; update on eBay (Chapter 11).
- Alibaba; the impact of the Covid-19 pandemic on supply chains, including a new *Insight on Society* case on supply chain disruption; blockchain in the food industry supply chain; cloud-based B2B; mobile B2B; B2B marketing; Carrefour UAE’s use of collaborative commerce (new *Insight on Business* case) (Chapter 12).

## FEATURES AND COVERAGE

**Strong Conceptual Foundation: Business, Technology, Society** The book emphasizes the three major driving forces that permeate all aspects of e-commerce: business development and strategy, technological innovations, and social and legal issues and impacts. In each chapter, we explore how these forces relate to the chapter’s main topic, which provides students with a strong and coherent conceptual framework for understanding e-commerce.

**Currency** Important new developments happen almost every day in e-commerce and the Internet. We try to capture as many of these important new developments as possible in each annual edition. You will not find a more current book for a course offered for the 2021–2022 academic year. Many other texts are already six months to a year out of date before they even reach the printer. This text, in contrast, reflects extensive research through March 2021, just weeks before the book hits the press.

**Real-World Global Business Firm Focus and Cases** From Akamai Technologies to Google, Microsoft, Apple, and Amazon; to Facebook, Twitter, and TikTok; to Netflix, YouTube, and Pinterest, this book contains hundreds of real-company examples and over 60 more-extensive cases that place coverage in the context of actual e-commerce businesses. You’ll find these examples in each chapter, as well as in special features such as chapter-opening, chapter-closing, and “Insight on” cases. The book takes a realistic look at the world of e-commerce, describing what’s working and what isn’t, rather than presenting a rose-colored or purely “academic” viewpoint. We strive to maintain a critical perspective on e-commerce and avoid industry hyperbole.

**In-depth Coverage of Marketing and Advertising** The text includes two chapters on marketing and advertising, both traditional online marketing and social, mobile, and local marketing. Marketing concepts, including market segmentation, personalization, clickstream analysis, bundling of digital goods, long-tail marketing, and dynamic pricing, are used throughout the text.

**In-depth Coverage of B2B E-commerce** We devote an entire chapter to an examination of B2B e-commerce. In writing this chapter, we developed a unique and easily understood classification schema to help students understand this complex arena of e-commerce. This chapter covers e-commerce supply chains, e-distributors, e-procurement companies, exchanges, and industry consortia, as well as the development of private industrial networks and collaborative commerce.

**Current and Future Technology Coverage** Internet and related information technologies continue to change rapidly. The most important changes for e-commerce include dramatic price reductions in e-commerce infrastructure (making it much less expensive to develop a sophisticated e-commerce presence), the explosive growth in the mobile platform, and expansion in the development of social technologies, which are the foundation of online social networks. While we thoroughly discuss the current Internet environment, we devote considerable attention to describing emerging technologies and applications such as the Internet of Things, blockchain, artificial intelligence, augmented and virtual reality, and 5G and Wi-Fi 6, among many others.

**Up-to-Date Coverage of the Research Literature** This text is well grounded in the e-commerce research literature. We have sought to include, where appropriate, references to and analysis of the latest e-commerce research findings, as well as many classic articles, in all of our chapters. We have drawn especially on the disciplines of economics, marketing, and information systems and technologies, as well as law journals and broader social science research journals including sociology and psychology. Figures and tables sourced to “authors’ estimates” reflect analysis of data from the U.S. Department of Commerce, estimates from various research firms, historical trends, revenues of major online retailers, consumer online buying trends, and economic conditions.

**Special Attention to the Social and Legal Aspects of E-commerce** We have paid special attention throughout the book to the social and legal context of e-commerce. Chapter 8 is devoted to a thorough exploration of ethical dimensions of e-commerce, including information privacy, intellectual property, governance, and protecting public welfare on the Internet.

**Writing That’s Fun to Read** Unlike some textbooks, we’ve been told by many students that this book is actually fun to read and easy to understand. This is not a book written by committee—you won’t find a dozen different people listed as authors, co-authors, and contributors on the title page. We have a consistent voice and perspective that carries through the entire text and we believe the book is the better for it.



## OVERVIEW OF THE BOOK

The book is organized into four parts.

Part 1, “Introduction to E-commerce,” provides an introduction to the major themes of the book. Chapter 1 defines e-commerce, distinguishes between e-commerce and e-business, and defines the different types of e-commerce. Chapter 2 introduces and defines the concepts of business model and revenue model, describes the major e-commerce business and revenue models for both B2C and B2B firms, and introduces the basic business concepts required throughout the text for understanding e-commerce firms including industry structure, value chains, and firm strategy. Chapter 2 also includes a section on the important topic of e-commerce technology and business model disruption.

Part 2, “Technology Infrastructure for E-commerce,” focuses on the technology infrastructure that forms the foundation for all e-commerce. Chapter 3 traces the historical development of the Internet and thoroughly describes how the Internet, Web, and mobile platform work. Chapter 4 focuses on the steps managers need to follow in order to build an e-commerce presence. This chapter covers the process that should be followed in building an e-commerce presence; the major decisions regarding outsourcing site development and/or hosting; how to choose software, hardware, and other tools that can improve website performance; and issues involved in developing a mobile website and mobile applications. Chapter 5 focuses on e-commerce security and payments, building on the e-commerce infrastructure discussion of the previous chapter by describing the ways security can be provided over the Internet. This chapter defines digital information security, describes the major threats to security, and then discusses both the technology and policy solutions available to business managers seeking to secure their firm’s sites. This chapter concludes with a section on e-commerce payment systems. We identify the various types of online payment systems (credit cards, stored value payment systems such as PayPal, digital wallets, and others), the development of mobile and social payment systems such as Apple Pay, Venmo, Zelle, and Facebook Messenger, as well as a section on cryptocurrencies and blockchain, the technology underlying cryptocurrencies.

Part 3, “Business Concepts and Social Issues,” focuses directly on the business concepts and social-legal issues that surround the development of e-commerce. Chapter 6 focuses on e-commerce consumer behavior, the Internet audience, and introduces the student to the basics of online marketing and branding, including traditional online marketing technologies and marketing strategies. Topics include the website as a marketing platform, search engine marketing and advertising, display ad marketing, e-mail campaigns, affiliate and lead generation marketing programs, multichannel marketing, and various customer retention strategies such as personalization (including interest-based advertising, also known as behavioral targeting) and customer service tools. The chapter also covers other marketing strategies such as pricing and long-tail marketing. Internet marketing technologies (web transaction logs, tracking files, data mining, and big data) and marketing automation and CRM systems are also explored. The chapter

concludes with a section on understanding the costs and benefits of various types of online marketing, including a section on marketing analytics software. Chapter 7 is devoted to an in-depth analysis of social, mobile, and local marketing. Topics include Facebook, Twitter, Pinterest, and other social media marketing platforms such as Instagram, Snapchat, TikTok, and LinkedIn, the evolution of mobile marketing, and the growing use of geo-aware technologies to support proximity marketing. Chapter 8 provides a thorough introduction to the social and legal environment of e-commerce. Here, you will find a description of the ethical and legal dimensions of e-commerce, including a thorough discussion of the latest developments in personal information privacy, intellectual property, Internet governance, questions surrounding Big Tech and competition, jurisdiction, and public health and welfare issues such as pornography, gambling, and health information.

Part 4, “E-commerce in Action,” focuses on real-world e-commerce experiences in retail and services, online media, auctions, portals, and social networks, and business-to-business e-commerce. These chapters take a sector approach rather than the conceptual approach used in the earlier chapters. E-commerce is different in each of these sectors. Chapter 9 takes a close look at the experience of firms in the retail marketplace for both goods and services, as well as on-demand service companies such as Uber and Airbnb. Chapter 9 also includes an “E-commerce in Action” case that provides a detailed analysis of the business strategies and financial operating results of Amazon, which can be used as a model to analyze other e-commerce firms. Chapter 10 explores the world of online content and digital media and examines the enormous changes in online publishing and entertainment industries that have occurred over the last two years, including online newspapers and magazines, e-books, streaming home entertainment, movies, and music, and online games and e-sports. Chapter 11 explores the online world of social networks, auctions, and portals. Chapter 12 concentrates on the world of B2B e-commerce, describing e-commerce supply chains, and various types of B2B business models, including different types of Net marketplaces as well as the less-heralded, but very large arena of private industrial networks and the movement toward collaborative commerce.

## **PEDAGOGY AND CHAPTER OUTLINE**

The book’s pedagogy emphasizes student cognitive awareness and the ability to analyze, synthesize, and evaluate e-commerce businesses. While there is a strong data and conceptual foundation to the book, we seek to engage student interest with lively writing about e-commerce businesses and the transformation of business models at traditional firms.

Each chapter contains a number of elements designed to make learning easy as well as interesting.

**Learning Objectives** A list of learning objectives that highlights the key concepts in the chapter guides student study.

**Chapter-Opening Cases** Each chapter opens with a story about a leading e-commerce company or topic that relates the key objectives of the chapter to a real-life e-commerce business venture or issue.

## Everything on Demand: The "Uberization" of E-commerce

If you were asked to pick iconic examples of e-commerce in the two decades since it began in 1995, it is likely that companies such as Amazon, Google, Apple, and Facebook would be high on your list. But over the last few years, a new breed of e-commerce company has muscled its way to the forefront. Uber and other firms with similar business models, such as Lyft (a ride service similar to Uber's), Airbnb (rooms for rent), Deliveroo (food delivery), and ZipJet (laundry service), are the pioneers of an on-demand service e-commerce business model that

has swept up billions of investment dollars and disrupted major industries, from transportation to hotels, real estate, house cleaning, maintenance, and grocery shopping.

Uber is perhaps the most well-known, as well as the most controversial, company that uses the on-demand service model. Uber offers a variety of different services. Its UberX, which segment offers consumers a way to get from Point A to Point B, ranging from UberX, which uses compact sedans and is the least expensive, to Uber Black, which provides higher-priced town car service. Its Uber Eats segment focuses on food delivery services. Its Uber Freight segment offers long-haul trucking services.

Uber, headquartered in San Francisco, was founded in 2009 by Travis Kalanick and Garrett Camp, and has grown explosively since then to over 900 major cities and thousands of smaller ones in 69 countries. In 2019, Uber had 3.9 million drivers worldwide and over 110 million monthly active riders who made 6.9 billion trips during the year. In 2019, those riders spent \$65 billion on the Uber platform, generating \$14.1 billion in revenue for Uber, but it still lost a whopping \$8.5 billion (although \$4.6 billion of that loss was due to stock-based compensation expense). Uber's strategy in the past has been to expand as fast as possible while foregoing short-term profits in the hope of long-term returns.

Despite the fact that, as of yet, it has not been able to operate at a profit, Uber offers a compelling value proposition for both customers and drivers. Customers can sign up for free, request a pickup using his or her smartphone, and nearly instantly (under the best of circumstances) Uber finds a provider and notifies the customer of the estimated time of arrival and price. Riders can accept the price or find an alternative. No need to stand on a



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**“Insight on” Cases** Each chapter contains three real-world cases illustrating the themes of technology, business, and society. These cases take an in-depth look at relevant topics to help describe and analyze the full breadth of the field of e-commerce. The cases probe such issues as the ability of governments to regulate Internet content, how to design websites for accessibility, the challenges faced by luxury marketers in online marketing, and smartphone security.

**Margin Glossary** Throughout the text, key terms and their definitions appear in the text margin where they are first introduced.

**Real-Company Examples** Drawn from actual e-commerce ventures, well over 100 pertinent examples are used throughout the text to illustrate concepts.







**Chapter-Closing Case Studies** Each chapter concludes with a robust case study based on real-world organizations. These cases help students synthesize chapter concepts and apply this knowledge to concrete problems and scenarios such as Twitter's efforts to adjust its business model, ExchangeHunterJumper's efforts to build a brand, and the evolution of eBay.

**Chapter-Ending Pedagogy** Each chapter contains extensive end-of-chapter materials designed to reinforce the learning objectives of the chapter.

**Key Concepts** Keyed to the learning objectives, Key Concepts present the key points of the chapter to aid student study.

**Review Questions** Thought-provoking questions prompt students to demonstrate their comprehension and apply chapter concepts to management problem solving.

**Projects** At the end of each chapter are a number of projects that encourage students to apply chapter concepts and to use higher-level evaluation skills. Many make use of the Internet and require students to present their findings in an oral or electronic presentation or written report. For instance, students are asked to evaluate publicly available information about a company's financials at the SEC website, assess payment system options for companies across international boundaries, or search for the top 10 cookies on their own computer and the sites they are from.



**Web Resources** Web resources that can extend students' knowledge of each chapter with projects, exercises, and additional content are available at [E-commerce2021global.com](http://E-commerce2021global.com). The website contains the following content provided by the authors:

- Additional projects, exercises, and tutorials
- Information on how to build a business plan and revenue models
- Essays on careers in e-commerce

## INSTRUCTOR RESOURCES

At the Instructor Resource Center, [www.pearsonglobaleditions.com](http://www.pearsonglobaleditions.com), instructors can easily register to gain access to a variety of instructor resources available with this text in downloadable format. If assistance is needed, our dedicated technical support team is ready to help with the media supplements that accompany this text. Visit [support.pearson.com/getsupport](http://support.pearson.com/getsupport) for answers to frequently asked questions and toll-free user support phone numbers.

The following supplements are available with this text:

- **Instructor's Resource Manual**
- **Test Bank**
- **TestGen® Computerized Test Bank**
- **PowerPoint Presentation**
- **Image Library**
- **Video Cases** The authors have created a collection of video case studies that integrate short videos, supporting case study material, and case study questions. Video cases can be used in class to promote discussion or as written assignments. There are 32 video cases for the 16th edition, all with updated supporting case study material.

**Chapter 1:** 1.1 The Importance of the Internet for E-commerce; 1.2 The Growth of the On-Demand Economy

**Chapter 2:** 2.1 Glossier; 2.2 Angel Investing

**Chapter 3:** 3.1 How Freshdesk Uses Amazon Web Services; 3.2 Compare.com Turns to Microsoft Azure and the Cloud; 3.3 Facebook's Data Centers; 3.4 Smart Speakers: Amazon Echo and Google Home

**Chapter 4:** 4.1 E-commerce Platforms: Salesforce Commerce Cloud; 4.2 National Kidney Registry Turns to Rackspace for Managed Hosting; 4.3 Building a Mobile App

**Chapter 5:** 5.1 The Rise of Cyberwarfare; 5.2 Understanding Bitcoin

**Chapter 6:** 6.1 To Ad Block or Not to Ad Block; 6.2 Pandora's Recommendation System; 6.3 Verizon Media

**Chapter 7:** 7.1 Pinterest; 7.2 The Full Value of Mobile Marketing; 7.3 Yelp

**Chapter 8:** 8.1 The Right to Be Forgotten; 8.2 Facebook Privacy; 8.3 What Net Neutrality Means for You

**Chapter 9:** 9.1 Walmart Takes On Amazon; 9.2 Etsy: A Marketplace and a Community

**Chapter 10:** 10.1 YouTube: Secrets of Successful Content Creators; 10.2 Vox Media; 10.3 ESPN: Sports Broadcasting Evolves; 10.4 Disney+

**Chapter 11:** 11.1 Instagram; 11.2 Small Businesses Find a Home on eBay

**Chapter 12:** 12.1 Elementum; 12.2 Mechan Groep Streamlines with Sana Commerce

- **Learning Tracks** These additional essays, created by the authors, provide instructors and students with more in-depth content on selected topics in e-commerce.

**Chapter 1:** 1.1 Global E-commerce Europe; 1.2 Global E-commerce Latin America; 1.3 Global E-commerce China

**Chapter 6:** 6.1 Basic Marketing Concepts; 6.2 Consumer Behavior: Cultural, Social, and Psychological Background Factors; 6.3 Social Media Marketing—Blogging

**Chapter 7:** 7.1 Social Media Marketing: Facebook; 7.2 Social Media Marketing: Twitter

## ACKNOWLEDGMENTS

Pearson has sought the advice of many excellent reviewers, all of whom have strongly influenced the organization and substance of this book. The following individuals provided extremely useful evaluations of this and previous editions of the text:

Deniz Aksen, Koç University (Istanbul)	Daniel Connolly, University of Denver
Carrie Andersen, Madison Area Technical College	Tom Critzer, Miami University
Subhajyoti Bandyopadhyay, University of Florida	Dr. Robin R. Davis, Claflin University
Christine Barnes, Lakeland Community College	Dursan Delen, Oklahoma State University
Reneta Barneva, SUNY Fredonia	Abhijit Deshmukh, University of Massachusetts
Rathin Basu, Ferrum College	Brian L. Dos Santos, University of Louisville
Dr. Shirley A. Becker, Northern Arizona University	Robert Dreves, University of Notre Dame
Prasad Bingi, Indiana-Purdue University, Fort Wayne	Akram El-Tannir, Hariri Canadian University, Lebanon
Joanna Broder, Pima Community College	Kimberly Furumo, University of Hawaii at Hilo
Lisa Bryan, Southeastern Community College	John H. Gerdes, University of California, Riverside
James Buchan, College of the Ozarks	Gurram Gopal, Illinois Institute of Technology
Ashley Bush, Florida State University	Philip Gordon, University of California at Berkeley
Cliff Butler, North Seattle Community College	Allan Greenberg, Brooklyn College
Carl Case, St. Bonaventure University	Bin Gu, University of Texas at Austin
Teuta Cata, Northern Kentucky University	Norman Hahn, Thomas Nelson Community College
Adnan Chawdhry, California University of Pennsylvania	Peter Haried, University of Wisconsin— La Crosse
Mark Choman, Luzerne City Community College	Sherri Harms, University of Nebraska at Kearney
Andrew Ciganek, Jacksonville State University	Sharon Heckel, St. Charles Community College
	David Hite, Virginia Intermont College

Gus Jabbour, George Mason University  
Thaddeus Janicki, University of Mount Olive  
Kevin Jetton, Texas State University, San Marcos  
Jim Keogh, Saint Peter's University  
Ellen Kraft, Georgian Court University  
Krish Krishnan, Indiana University of Pennsylvania  
Gilliean Lee, Lander University  
Zoonky Lee, University of Nebraska, Lincoln  
Andre Lemaylleux, Boston University, Brussels  
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## **GLOBAL EDITION ACKNOWLEDGMENTS**

Pearson would like to thank the following people for their work on the Global Edition:

### **Contributors**

Saadat Alhashmi, University of Sharjah  
Bernard Bouwman  
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June Clarke, Sheffield Hallam University  
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Graham Jones, University of Buckingham  
PK Senyo, University of Southampton

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Eddren Law Yi Feng, Universiti Tenaga Nasional  
Bernd Schenk, University of Liechtenstein  
Tuan Yu, University of Kent

We would also like to thank eMarketer, Inc. and David Iankelevich for their permission to include data and figures from their research reports in our text over the course of many editions. eMarketer is one of the leading independent sources for statistics, trend data, and original analysis covering many topics related to the Internet, e-business, and emerging technologies. eMarketer aggregates e-business data from multiple sources worldwide.

In addition, we would like to thank all those who have worked so hard to make sure this book is the very best it can be, including Steven Jackson, Managing Editor, Global Editions; Daniel Luiz, Senior Project Editor, Global Editions; and Kajori Chattopadhyay, Assistant Editor, Global Editions. Very special thanks to Will Anderson and Megan Miller at Azimuth Interactive, Inc., for all their hard work on the production of this book.

Finally, last but not least, we would like to thank our family and friends, without whose support this book would not have been possible.

*Kenneth C. Laudon  
Carol Guercio Traver*

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