E-commerce

business. technology. society.

2023

SEVENTEENTH EDITION

Kenneth C. Laudon

Carol Guercio Traver

Chapter-Opening Cases, Insight Cases, and Case Studies

Chapter 1: The Revolution Is Just Beginning
Opening Case: TikTok: Creators and the Creator Economy
Insight on Technology: Will Apps Make the Web Irrelevant?
Insight on Business: Y Combinator's Startup Boot Camp
Insight on Society: Facebook and the Age of Privacy
Case Study: Uber: Everything on Demand

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Chapter 3: E-commerce Infrastructure: The Internet, Web, and Mobile Platform
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Case Study: Elemica: Cooperation, Collaboration, and Community

E-commerce

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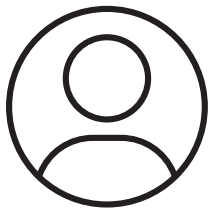
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PREFACE

NEW TO THIS EDITION

E-commerce 2023: business.technology. society, 17th edition, provides a thoroughly updated, in-depth introduction to the field of e-commerce. We focus on the 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.

Just as important, we have tried to create a book that is thought-provoking and current. The 17th edition features the latest developments in business, technology, and society that are impacting e-commerce. 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 Meta's Facebook and Instagram, Google, Amazon, Apple, TikTok, YouTube, Twitter, eBay, Uber, and many more that you will recognize, as well as some exciting startups that may be new to you. We also have up-to-date coverage of key topics in e-commerce today, from privacy and piracy to government surveillance, cybercrime, fintech, social-local-mobile marketing, intellectual property, and many 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. Many employers expect new employees to understand the basics of e-commerce, online marketing, and developing an e-commerce presence. Every industry today is touched in at least some way by e-commerce. The information and knowledge that you find in this book will be valuable throughout your career, and after you read this book, we expect that you will be able to participate in, and even lead, management discussions about e-commerce for your firm.

Enhanced Stand-Alone Pearson eTextbook

E-commerce 2023: business. technology. society, 17th edition, is available as a stand-alone eTextbook, which extends the student learning experience anytime and anywhere: The mobile app lets students use their eTextbook on Android and iPhone mobile phones and tablets. The eTextbook engages students with compelling media: Videos and animations written and produced by the authors bring key concepts to life, helping students place what they are reading into context. Other features include highlights that allow educators to share information directly with students within the eTextbook and analytics that let educators gain insight into how students use their eTextbook, thus allowing educators to plan more effective instruction. Pearson's eTextbook platform provides an affordable, simple-to-use mobile teaching and learning experience.

Included in the *E-commerce*, 17th edition, eTextbook are:

- **Interactive Tools**—Students can highlight, take notes, and review key vocabulary all in one place, even when they are offline. Seamlessly integrated interactivities and videos enliven student learning and understanding of concepts.

- **Figure Videos**—Author Ken Laudon walks students through important concepts in each chapter using a contemporary animation platform (12 in total). Available only in the Pearson eTextbook.
- **New Video Cases**—A brand-new collection of video cases (two per chapter, 24 in total) draws from Pearson's extensive library of business and technology video clips. The cases cover key concepts and topics, with associated case material and assessments. Video cases are listed at the beginning of each chapter and on pp. xxix–xxx of the Preface.

New and Updated Topics

The 17th edition features all new or updated opening, closing, and "Insight on" cases. The text, as well as data, figures, and tables in the book, have been updated through September 2022 with the latest information available from 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 2021–2022, including the following:

- The continuing impact of the Covid-19 pandemic on the Internet and e-commerce (throughout the book and particularly in Chapters 3 and 12)
- Creators and the creator economy; influencers and influencer marketing (Chapters 1, 2, 7, and 10)
- The rise of TikTok (Chapters 1, 7, and 11)
- The metaverse (Chapters 1, 3, 5, 7, and 8)
- Web3 (Chapters 1 and 3)
- Data privacy concerns; Apple's and Google's new privacy initiatives (Chapters 1, 2, 6, and 8)
- Artificial intelligence and big data in e-commerce and online advertising (Chapters 1, 6, and 9)
- Efforts to control Big Tech via litigation, regulation, and legislation (Chapters 1 and 8)
- The impact of the ESG (environmental, social, and governance) and sustainability movements (recommerce, circular economy) (Chapters 1, 2, 9, 11, and 12)
- Blockchain technologies (Chapters 1, 5, 12)
- The impact of the Internet of Things (IoT) on e-commerce, e-commerce business models, and supply chains (Chapters 2, 3, and 12)
- The QUIC protocol as a replacement for TCP (Chapter 3)
- New Internet access technologies, such as low earth orbit satellites and the arrival of 5G (Chapter 3)
- The growing importance of omnichannel retail strategies, including BOPIS/click-and-collect (Chapters 4 and 9)
- Major security issues, such as software supply chain attacks, ransomware, cybercurrency hacks, large-scale data breaches, and hacks related to software vulnerabilities (Chapter 5)
- New alternative payment services such as Buy Now Pay Later (BNPL) services and cryptocurrencies, including Bitcoin, Ethereum, and stablecoins (Chapter 5)

- Contextual advertising and first-party tracking as a replacement for behavioral targeting (Chapter 6)
- Social marketing using TikTok and Instagram (Chapter 7)
- Apple ITP and ATT and Google Privacy Sandbox (Chapter 8)
- Web scraping as a copyright issue; efforts to update the Digital Millennial Copyright Act (Chapter 8)
- State regulatory efforts with respect to privacy, Internet sales tax, net neutrality, and online gambling (Chapter 8)
- Carvana and other digitally native direct-to-consumer companies (Chapter 9)
- Fintechs including neobanks, robo-advisors, and insurtech (Chapter 9)
- New streaming services, Gen Z and media consumption, and online gaming (Chapter 10)
- LinkedIn, Facebook algorithms, eBay, Yahoo, and AOL (Chapter 11)
- Supply chain disruption, digital twins (Chapter 12)

SOLVING TEACHING AND LEARNING CHALLENGES

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 edition. You will not find a more current book for a course offered in the 2023 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 September 2022, just weeks before the book hits the press.

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.

Real-World Business Firm Focus and Cases From Amazon to Google, Microsoft, and Apple; to Facebook, Instagram, TikTok, Twitter, and LinkedIn; to Netflix, YouTube, and Hulu; to Uber, Lyft, Instacart, and Grubhub; to Etsy, eBay, and Dick's Sporting Goods; and so many more, this book contains hundreds of real-company examples and 60 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.

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. Although we thoroughly discuss the current Internet environment, we also devote considerable attention to describing emerging technologies and applications such as the metaverse, Web3, the Internet of Things (IoT), blockchain, big data, artificial intelligence, augmented and virtual reality, low earth orbit satellite Internet systems, 5G and Wi-Fi 6, among many others.

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 safety and public welfare on the Internet.

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 discussed 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 B2B networks and collaborative commerce.

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 on law journals and broader social science research journals that cover disciplines such as 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.

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. Instead, 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, including industry structure, value chains, and firm strategy, necessary for a thorough understanding of e-commerce firms. Chapter 2 also includes a section on the important topics of e-commerce technology and business model disruption.

Part 2, "Technology Infrastructure for E-commerce," focuses on the technology infrastructure that forms the foundation of 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 that managers need to follow in order to build an e-commerce presence. This chapter also 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 in which 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 the 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 and discuss the development of alternative payment systems such as Apple Pay, Venmo, Zelle, Buy Now Pay Later (BNBP) services, as well as 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 and 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, Instagram, TikTok, Twitter, Pinterest, and other social media marketing platforms such as Snapchat 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.

Part 4, "E-commerce in Action," focuses on real-world e-commerce experiences in online retail and services, online content and media, social networks, auctions, portals, 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, 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 B2B e-commerce marketplaces as well as the less heralded but still very large arena of private B2B networks and the movement toward collaborative commerce.

CHAPTER ORGANIZATION

The book's pedagogy emphasizes student cognitive awareness and the ability to analyze, synthesize, and evaluate e-commerce businesses. Although 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.

Video Cases Each chapter has a list of video cases that are related to one or more key concepts or topics within the chapter.

Chapter-Opening Cases Each chapter opens with a case that features 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. Companies featured include TikTok, Walmart, YouTube, Lemonade, LinkedIn, and Amazon Business, among others. Sources provide a list of the references that enable students to delve deeper into the topic of the case.

TikTok:
Creators and the Creator Economy

During its first decade or so, the Web was a very different place than it is today. It was much more static and used primarily to gather information. That all started to change around the mid-to-late 2000s, with the development of Web 2.0, a set of applications and technologies that enabled the creation of user-generated content. Coupled with the development of the smartphone and smartphone apps, this laid the groundwork for social networks and the sharing of all sorts of content that allowed people to express themselves online. People who develop and distribute such content are now typically referred to as "creators," a label originated by YouTube in 2011 for a growing class of users that were attracting large audiences to their channels. From there, the label spread. Influencers, who use social media to grow a following and exert influence over the purchasing decisions of those followers, typically for some form of compensation or monetization, can be considered a subset of creators, although some use the terms synonymously. A recent report estimates the number of creators at 200 million worldwide, and an entire supporting ecosystem, referred to as the creator economy, has spread up around them. TikTok is one of the preeminent content platforms in the creator economy.

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TikTok, the third-most-popular social network in the United States behind Facebook and Instagram, is also one of the fastest growing, with 95 million U.S. users and more than 750 million worldwide. (TikTok says it has more than 1 billion users.) Launched in 2017, TikTok is a short-form video-sharing app owned by Chinese company Bytedance. TikTok videos were initially limited to 15 seconds but can now be up to 10 minutes long. Many TikTok videos feature music, with users lip-syncing, singing, and dancing; others focus on comedy and creativity. Users can "remix" posts from other users and put their own spin on them, using the app's array of editing tools, filters, and other effects. Algorithms analyze the viewing habits of each user, and its "For You" page provides content that is customized based on the user's activity. The algorithm makes it possible for TikTokers to amass millions of followers within a matter of weeks, creating stars faster than any other platform.

TikTok skews much younger than other social networks and is the most popular network in the United States among children, teens, and young adults. Almost 70 percent of its U.S. users are under the age of 35. In 2022, TikTok is expected to become the leading social network platform among U.S. adult users (ages 18 and over) in terms of time spent per day (more than 45 minutes), surpassing YouTube. A survey of 7,000 TikTok users revealed that almost 70% follow specific creators. Gen Z is leading the charge, with 50% saying that they follow specific TikTok creators.

"Insight on" Cases Each chapter contains three real-world cases illustrating the themes of technology, business, or 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 biometric security. Companies featured include Facebook, Y Combinator, Foursquare, Etsy, SpaceX, Zoom, Wix, Duolingo, Yoox Net-a-Porter, Sprout Social, Stitch Fix, Instacart, Grubhub, Vox, Twitch, Yahoo, AOL, and De Beers, among others. Sources provide a list of the references that enable students to delve deeper into the topic of the case.

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, hundreds of pertinent examples are used throughout the text to illustrate concepts.

INSIGHT ON BUSINESS

STARTUPS TURN TO CROWDFUNDING

In years past, startups viewed raising money through crowdfunding as a last resort. But times have changed. Today, more and more startups are turning to equity (Regulation CF) crowdfunding, for a variety of reasons. The Covid-19 pandemic played a large role in jumpstarting equity crowdfunding's rise. When the pandemic hit, it shifted many venture capital investors into a defensive position, with a significant number scaling back...

SEC rule that requires companies with more than a certain number of investors to register as a public company. Finally, companies can now test the waters to determine potential investor interest in an offering before having to make any regulatory filings. Another factor in the growth of equity crowdfunding is the ability to use social media as a means of free or relatively inexpensive promotion. This has all paved the way for a significant increase in equity crowdfunding investments, which in 2021 totaled more than...

INSIGHT ON SOCIETY

IMMERSED IN THE METAVERSE: WILL IT BE SAFE?

In October 2021, Facebook made a surprising announcement. It was changing its name to Meta to underscore what it believes will be the future not only of Facebook but of the Internet as a whole. What exactly is the metaverse. The metaverse encompasses current technologies, such as virtual reality (VR), augmented reality (AR), mixed reality, virtual worlds, and environments within which users can connect, socialize, and transact. Although development has kicked off with a great deal of interest, it also raises questions about the potential impact the metaverse may have on people's lives.

Mark Zuckerberg, Meta's founder and CEO, believes that the metaverse is the ultimate expression of social technology. He envisions the metaverse as a persistent, shared space where, instead of just viewing content, you experience being in it and feeling physically present. Although VR, AR, a...

from seizures to dizziness, nausea, vomiting and visual issues. It notes that symptoms can persist for hours after use. It also warns that frightening, violent, or anxiety-provoking content can cause a user's body to react as if the...

INSIGHT ON TECHNOLOGY

BEHIND THE SCENES AT ETSY

In 2005, two NYU college students, Rob Kalin and Chris Maguire, were doing freelance web development work to help pay their tuition. They did a revamp of an online community chat forum site dedicated to crafting. In the process, they had a chance to engage with site members and learned that many of them wished they had a better place to sell the goods they were making. Trying to sell through physical venues, such as craft fairs and consignment shops, was inefficient. Most also felt that eBay was too big, too expensive, and too impersonal. Kalin and Maguire banded together with another friend, Haim Schoppik, and developed a prototype: a bare-bones e-commerce website dedicated to handmade crafts. As the prototype neared completion, Kalin began to focus on a name. He knew that a short website name would be easier to remember and also wanted a made-up word that they could build a brand around. The team settled on Etsy. At the same time, Kalin was making the rounds looking for seed funding, ultimately securing around $315,000 from three investors.

After three months of working on the site,

that more robust search functionality would be required. One of the first tools added was the ability to search items by color, something that proved so useful that Etsy ended up patenting the technology. Chat forums were another tool that sellers wanted. A geolocator was added so that shoppers could view goods from a particular country or city. Finally, after several months, Etsy implemented a transaction fee revenue model, initially charging 10 cents per listing and a 3.5% fee on items sold. By then, Etsy was gaining traction and was able to secure its first round of venture capital financing in November 2006, with follow-on rounds in 2007. By July 2007, 1 million items had been sold on the platform. But it was clear that Etsy still needed additional funds if it was going to continue to grow. In January 2008, it received an additional $27 million in venture capital investment, and subsequent rounds of funding raised the total to $97.3 million. In 2015, Etsy went public, raising $267 million and valuing the company at more than $3 billion. By that time, it had more than 54 million members, including 1.4 million active sellers, and was generating more than $1.9 billion in gross merchandise sales (GMS)

Careers in E-commerce At the end of every chapter, we feature a section on careers in e-commerce that examines a job posting, based on a real-world job opening, by an e-commerce company for an entry-level position. Examples include job openings for an e-commerce retail category specialist, a user experience (UX) designer, a cybersecurity threat management team trainee, a digital marketing assistant, an e-commerce privacy research associate, a digital audience development associate, a social marketing specialist, and a junior supply chain analyst, among others. We provide a brief overview of the field and the company, some details about the position, a list of the qualifications and skills that are typically required, and some tips about how to prepare for an interview, and then show how the concepts learned in each chapter can help students answer some possible interview questions.

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 their knowledge to concrete problems and scenarios. Companies featured include Uber, Twitter, Akamai, Dick's Sporting Goods, Venmo, Zelle, Blue Nile, Netflix, eBay, and Elemica, among others. Sources provide a list of references that enable students to delve deeper into the topic of each case.

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

2.6 CASE STUDY

W e a t h e r i n g t h e S t o r m :
Twitter's Uncertain Future

Twitter, the social network originally based on 140-character text messages, emerged seemingly out of nowhere to take the world by storm. Twitter's basic idea was to marry short text messaging on cellphones with the Web and its ability to create social groups. As the years passed, Twitter expanded beyond simple text messages to article previews, photographs, videos, and animated images, by 2022, it had almost 230 million daily active users worldwide. The 5,000 tweets a day that it began with in 2006 has turned into a deluge of around 10,000 tweets per second and more than 500 million per day worldwide. Special events, such as the Super Bowl and Academy Awards, tend to generate an explosion of tweets. Some celebrities, such as pop star Justin Bieber, have millions of followers (in Bieber's case, around 114 million).

Twitter has a number of important assets, such as user attention, significant audience size (unique visitors), and its searchable database of tweets, which contain real-time audience comments, observations, and opinions. Twitter has also struggled to develop a profitable business model and display consistent growth, and its financial results and stock price have not matched its popularity and influence on culture and politics. Its user base remains a fraction of the size of Facebook's, TikTok's, and Instagram's.

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- **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 projects make use of the Internet and require students to present their findings in an oral presentation or a 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 that function across international boundaries, or search for the top 10 cookies on their own computer and the sites the cookies are from.
- **References** At the end of each chapter, a list of references enables students to find more information about the content and topics discussed in the chapter.

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The following supplements are available with this text:

- **Instructor's Manual** written by the authors. Provides chapter-by-chapter teaching outlines, teaching suggestions and key points, and answers to all questions and projects included in the textbook.
- **Test Bank** created by the authors. Includes a variety of multiple-choice, true/false, and essay questions. Includes questions on chapter content but also includes questions that require higher-level cognitive skills, such as analysis, synthesis, evaluation, and written communication skills.
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- **Image Library**
- **Video Cases** The authors have created a collection of video case studies that integrate a short video and associated case study, and case study questions. Video cases can be used in class to promote discussion or as written assignments. There are 24 video cases for the 17th edition, all new to this edition.

    Chapter 1
    Video Case 1.1: Shopify and the Future of E-commerce
    Video Case 1.2: YouTube and the Creator Economy

    Chapter 2
    Video Case 2.1: NFT Startup Magic Eden
    Video Case 2.2: Venture Capital Firm Neo

    Chapter 3
    Video Case 3.1: Meter's Internet Infrastructure Vision
    Video Case 3.2: Informatica and the Evolution of Cloud Technology

    Chapter 4
    Video Case 4.1: Bolt: One-Click Checkout for Small- and Medium-Sized Businesses
    Video Case 4.2: Figma: A Collaborative Web Application for UI Design

    Chapter 5
    Video Case 5.1: Crowdstrike and Cybersecurity
    Video Case 5.2: Klarna and Buy Now Pay Later (BNPL)

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Kenneth C. Laudon
Carol Guercio Traver

Introduction to E-commerce

The Revolution is Just Beginning

LEARNING OBJECTIVES

After reading this chapter, you will be able to:

1.1 Understand why it is important to study e-commerce.

1.2 Define e-commerce, understand how e-commerce differs from e-business, identify the primary technological building blocks underlying e-commerce, and recognize major current themes in e-commerce.

1.3 Identify and describe the unique features of e-commerce technology and discuss their business significance.

1.4 Describe the major types of e-commerce.

1.5 Understand the evolution of e-commerce from its early years to today.

1.6 Describe the major themes underlying the study of e-commerce.

▶ **NEW Video Cases**

See **eText Chapter 1** to watch these videos and complete activities:

1.1 Shopify and the Future of E-commerce

1.2 YouTube and the Creator Economy

TikTok:

Creators and the Creator Economy

During its first decade or so, the Web was a very different place than it is today. It was much more static and used primarily to gather information. That all started to change around the mid-to-late 2000s, with the development of Web 2.0, a set of applications and technologies that enabled the creation of user-generated content. Coupled with the development of the smartphone and smartphone apps, this laid the groundwork for social networks and the sharing of all sorts of content that allowed people to express themselves online. People who develop and dis-

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tribute such content are now typically referred to as "creators," a label originated by YouTube in 2011 for a growing class of users that were attracting large audiences to their channels. From there, the label spread. Influencers, who use social media to grow a following and exert influence over the purchasing decisions of those followers, typically for some form of compensation or monetization, can be considered a subset of creators, although some use the terms synonymously. A recent report estimates the number of creators at 200 million worldwide, and an entire supporting ecosystem, referred to as the creator economy, has spread up around them. TikTok is one of the preeminent content platforms in the creator economy.

TikTok, the third-most-popular social network in the United States behind Facebook and Instagram, is also one of the fastest growing, with 95 million U.S. users and more than 750 million worldwide. (TikTok says it has more than 1 billion users.) Launched in 2017, TikTok is a short-form video-sharing app owned by Chinese company Bytedance. TikTok videos were initially limited to 15 seconds but can now be up to 10 minutes long. Many TikTok videos feature music, with users lip-syncing, singing, and dancing; others focus on comedy and creativity. Users can "remix" posts from other users and put their own spin on them, using the app's array of editing tools, filters, and other effects. Algorithms analyze the viewing habits of each user, and its "For You" page provides content that is customized based on the user's activity. The algorithm makes it possible for TikTokers to amass millions of followers within a matter of weeks, creating stars faster than any other platform.

TikTok skews much younger than other social networks and is the most popular network in the United States among children, teens, and young adults. Almost 70 percent of its U.S. users are under the age of 35. In 2022, TikTok is expected to become the leading social network platform among U.S. adult users (ages 18 and over) in terms of time spent per day (more than 45 minutes), surpassing YouTube. A survey of 7,000 TikTok users revealed that almost 70% follow specific creators. Gen Z is leading the charge, with 50% saying that they follow specific TikTok creators.

There are a number of ways that creators can earn money. They can be supported by advertising, for instance, receiving payment directly from a brand for creating or sharing sponsored content or for featuring a product placement, or they may be paid a share of the advertising revenue earned by the platform on which their content appears. They can also sell digital content, either on a per-piece basis or on a subscription basis, as well as physical products. Non-fungible tokens (NFTs), which can be used to create unique digital assets such as collectibles, artwork, badges, and stickers, are a newer form of digital content that creators are beginning to use as rewards for their fans. Creators can also get "tips" from their fans (often characterized as "buying the creator a coffee"), money from a fan club or a donation platform, or for other types of fan engagement. Most creators use a variety of these income-generating methods rather than relying on just one.

Of the estimated 200 million creators, a much smaller subset characterizes themselves as "professionals." For these people, being a creator has evolved into a business. The leading creators on TikTok can earn millions of dollars. For example, Charli D'Amelio, who is probably the most well-known, with around 145 million followers, earned $17.5 million in 2021 according to *Forbes*, putting her at the top of the list of professional creators. Trained as a competitive dancer, Charli started posting dance and lip-synch videos on TikTok in May 2019 when she was just 15, and she quickly amassed a large following. Her older sister, Dixie D'Amelio, a singer with 57 million followers, was second on the list, with $10 million in earnings. The two sisters have capitalized on their TikTok fame by branching out into a clothing line as well as a Hulu docuseries, among other initiatives. In the third spot is Addison Rae, also a competitive dancer, with around 88 million followers and about $8.5 million in earnings. As with the D'Amelio sisters, Rae has leveraged her TikTok fame, releasing a music single in 2021 as well as inking a deal with Netflix.

But not everything is rosy in the creator economy. Although superstar creators can make an incredible amount of money, it is extremely difficult for the average creator to earn enough to replace a full-time income, and most creators make only a very limited amount of income, if any. Almost half of full-time creators make less than $1,000, and only 12% make more than $50,000, underscoring how difficult it can be to be a creator. The majority of creators do not have any sponsorship or branding deals, and even among those who do, most make less than $100 per paid post.

Being a content creator is also much more time consuming and stressful than many might assume. Jack Innanen, a 22-year-old TikTok star from Toronto, Canada, has 2.8 million followers. Innanen spends hours shooting video, editing, storyboarding, engaging with fans, and trying to obtain brand deals. Chrissy Chlapecka, a 21-year-old former Starbucks barista, is another example. Chlapecka started posting videos on TikTok as a way to deal with boredom during the Covid-19 pandemic and has since amassed 4.8 million followers. She spends at least an hour a day selecting her clothing and having her hair and makeup professionally done, in preparation for filming at least one video per day. Chlapecka notes that most people underestimate the amount of work that creators have to do and that it takes skill and perseverance to come up with fresh ideas day after day, establish a relationship with online followers, and try to obtain sponsorships. The grind wears many content creators down, leading to potential mental and physical health problems. TikTok's algorithm adds to the stress, as it is constantly serving up new content, making it hard for

SOURCES: "What Is the 'Creator Economy,'" by Werner Geyser, Influencermarketinghub.com, June 10, 2022; "In a First, TikTok Will Beat YouTube in User Time Spent," by Sara Lebow, Insider Intelligence/eMarketer, May 26, 2022; "The State of the Creator Economy: Definition, Growth, & Market Size," by Werner Geyser, Influencermarketinghub.com, May 20, 2022; "TikTok Is Giving Top Creators a Cut of Ad Revenues," by Daniel Konstantinovic, Insider Intelligence/eMarketer, May 5, 2022; "2022 Creator Report," Linktr.ee, April 20, 2022; "200 Million People Are Earning Money from Content Creation," by Sam Gutelle, Tubefilter.com, April 20, 2022; "TikTok Faces a Wave of Creator Frustration and Content Moderation Issues," by Daniel Konstantinovic, Insider Intelligence/eMarketer, March 25, 2022; "With a Voice Like Ariana Grande and a Message of Self-Love, Chicago TikTok Sensation

creators to maintain their viewership. Creators note that this volatility can be rattling: As quickly as their views rise, they can also fall, with fans moving on to the next new thing. And there is also an even darker side to being a content creator. Creators report being the subject of bullying, harassment, and threats. Internet trolls, especially, can be brutally vicious.

TikTok has established a $200 million Creator Fund, which it says is aimed at supporting creators seeking to make their livelihood through innovative content. To be eligible for the Creator Fund, creators must be at least 18 years old, must have at least 10,000 followers, and must have accumulated at least 10,000 video views in the previous 30 days before they apply. Some creators feel that this shuts out beginning and niche creators, who need the most support. In addition, the amount paid to creators by the Fund has been less than many expected when it was first announced, with an opaque payment structure. Unlike YouTube, which gives creators a cut of the ad revenues generated on the platform, TikTok did not. However, in May 2022, TikTok announced that it would expand its creator monetization options via a new program called TikTok Pulse, which will run ads alongside the top 4% of all videos and give creators a 50% cut of those ad revenues. However, many feel that this does not go far enough and once again shuts out smaller and niche creators. These critics point out that TikTok's ad revenues, which are expected to top $11 billion in 2022 (surpassing the combined ad revenues of Twitter and Snapchat), have been growing rapidly and that it would be more equitable if TikTok shared that revenue more broadly with the people responsible for attracting users to the platform.

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I n 1994, e-commerce as we now know it did not exist. In 2022, almost 215 million U.S. consumers are expected to spend about $1.3 trillion, and businesses about $8.5 trillion, purchasing products and services via a desktop/laptop computer, mobile device, or smart speaker. A similar story has occurred throughout the world. There have been significant changes in the e-commerce environment during this time period.

The early years of e-commerce, during the late 1990s, were a period of business vision, inspiration, and experimentation. It soon became apparent, however, that establishing a successful business model based on those visions would not be easy. There followed a period of retrenchment and reevaluation, which led to the stock market crash of 2000–2001, with the value of e-commerce, telecommunications, and other technology stocks plummeting. After the bubble burst, many people were quick to write off e-commerce. But they were wrong. The surviving firms refined and honed their business models, and the technology became more powerful and less expensive, ultimately leading to business firms that actually produced profits. Between 2002 and 2007, retail e-commerce grew at more than 25% per year.

Then, in 2007, Apple introduced the first iPhone, a transformative event that marked the beginning of yet another new era in e-commerce. Today, mobile devices, such as smartphones and tablet computers, and mobile apps have supplanted the traditional desktop/laptop platform and web browser as the most common method for consumers to access the Internet. Facilitated by technologies such as cellular networks, Wi-Fi, and cloud computing, mobile devices have become advertising, shopping, reading, and media-viewing machines, and in the process they have transformed consumer behavior yet again. During the same time period, social networks such as Facebook, Twitter, YouTube, Pinterest, Instagram, Snapchat, and TikTok, which enable users to distribute their own content (such as videos, music, photos, personal information, commentary, blogs, and more), rocketed to prominence. As discussed in the opening case, many such users, now referred to as creators and/or influencers, have taken additional steps to monetize their content. The mobile platform infrastructure also gave birth to another e-commerce innovation: on-demand services that are local and personal. From hailing a taxi to finding travel accommodations, to food delivery, on-demand services have created a marketspace that enables owners of resources such as cars, spare bedrooms, and spare time to find a market of eager consumers looking for such services. Today, mobile, social, and local are the driving forces in e-commerce. But e-commerce is always evolving. On the horizon are further changes, driven by technologies such as artificial intelligence, virtual and augmented reality, and blockchain, among others.

While the evolution of e-commerce technology and business has been a powerful and mostly positive force in our society, it is becoming increasingly apparent that it also has had, and continues to have, a serious societal impact, from promoting the invasion of personal privacy to aiding the dissemination of false information, enabling widespread security threats, and facilitating the growth of business titans, such as Amazon, Google, and Facebook (which has rebranded as Meta), that dominate their fields, leading to a decimation of effective competition. As a result, the Internet and e-commerce are entering a period of closer regulatory oversight that may have a significant impact on the conduct of e-commerce in the future.

1.1 THE FIRST FIVE MINUTES: WHY YOU SHOULD STUDY E-COMMERCE

The rapid growth and change that have occurred in the first quarter-century or so since e-commerce began in 1995 represents just the beginning—what could be called the first five minutes of the e-commerce revolution. Technology continues to evolve at exponential rates. This underlying evolution presents entrepreneurs with opportunities to create new business models and businesses in traditional industries and in the process disrupt—and in some instances destroy—existing business models and firms. The rapid growth of e-commerce is also providing extraordinary growth in career and employment opportunities, which we describe throughout the book.

Improvements in underlying information technologies and continuing entrepreneurial innovation in business and marketing promise as much change in the next decade as was seen in the previous two and a half decades. The twenty-first century will be an age of a digitally enabled social and commercial life, the outlines of which we can still only barely perceive at this time. It appears likely that e-commerce will eventually impact nearly all commerce and that most commerce will be e-commerce by the year 2050, if not sooner.

Business fortunes are made—and lost—in periods of extraordinary change such as this. The next five to 10 years hold exciting opportunities—as well as significant risks—for new and traditional businesses to exploit digital technology for market advantage, particularly in the wake of the Covid-19 pandemic, which continues to have a broad and lasting impact on many aspects of life, ranging from how businesses operate, to how consumers act, and to how social and cultural life evolves.

It is important to study e-commerce in order to be able to perceive and understand the opportunities and risks that lie ahead. By the time you finish this book, you will be able to identify the technological, business, and social forces that have shaped—and continue to shape—the growth of e-commerce and be ready to participate in, and ultimately guide, discussions of e-commerce in the firms where you work. More specifically, you will be able to analyze an existing or new idea for an e-commerce business, identify the most effective business model to use, and understand the technological underpinnings of an e-commerce presence, including the security and ethical issues raised as well as how to optimally market and advertise the business, using both traditional digital marketing tools and social, mobile, and local marketing.

1.2 INTRODUCTION TO E-COMMERCE

In this section, we'll first define e-commerce and then discuss the difference between e-commerce and e-business. We will also introduce you to the major technological building blocks underlying e-commerce: the Internet, the Web, and the mobile platform. The section concludes with a look at some major current trends in e-commerce.

WHAT IS E-COMMERCE?

e-commerce
the use of the Internet, the Web, and mobile apps and browsers running on mobile devices to transact business. More formally, digitally enabled commercial transactions between and among organizations and individuals
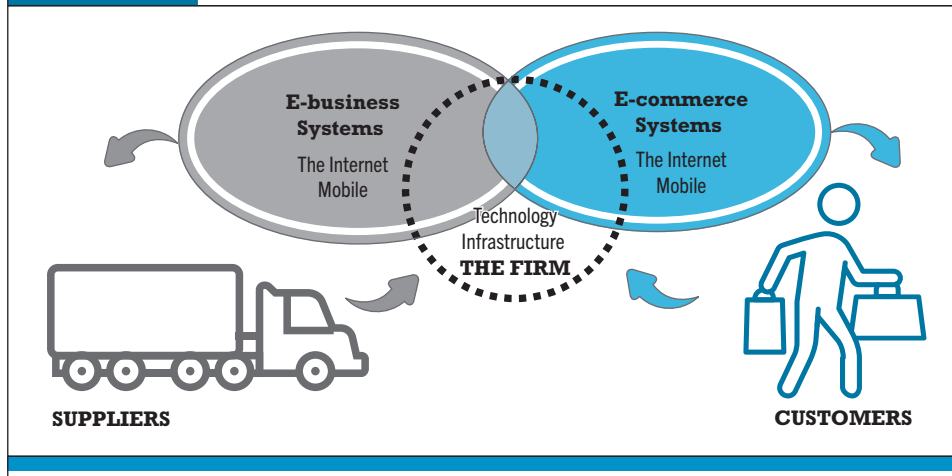
E-commerce involves the use of the Internet, the World Wide Web (Web), and mobile apps and browsers running on mobile devices to transact business. Although the terms Internet and Web are often used interchangeably, they are actually two very different things. The *Internet* is a worldwide network of computer networks, and the *Web* is one of the Internet's most popular services, providing access to trillions of web pages. An *app* (shorthand for "application") is a software application. The term is typically used when referring to mobile applications, although it is also sometimes used to refer to desktop computer applications as well. A *mobile browser* is a version of web browser software accessed via a mobile device. (We describe the Internet, Web, and mobile platform more fully later in this chapter and in Chapters 3 and 4.) More formally, e-commerce can be defined as digitally enabled commercial transactions between and among organizations and individuals. Each of these components of our working definition of e-commerce is important. *Digitally enabled transactions* include all transactions mediated by digital technology. For the most part, this means transactions that occur over the Internet, the Web, and/or via mobile devices. *Commercial transactions* involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services. Exchange of value is important for understanding the limits of e-commerce. Without an exchange of value, no commerce occurs. The professional literature sometimes refers to e-commerce as digital commerce. For our purposes, we consider e-commerce and digital commerce to be synonymous.

THE DIFFERENCE BETWEEN E-COMMERCE AND E-BUSINESS

There is a debate about the meaning and limitations of both *e-commerce* and *e-business*. Some argue that e-commerce encompasses the entire world of digitally based organizational activities that support a firm's market exchanges—including a firm's entire information system infrastructure. Others argue, on the other hand, that e-business encompasses the entire world of internal and external digitally based activities, including e-commerce. We think it is important to make a working distinction between *e-commerce* and *e-business* because we believe they refer to different phenomena. E-commerce is not "anything digital" that a firm does. For purposes of this text, we will use the term **e-business** to refer primarily to the digital enabling of transactions and processes *within* a firm, involving information systems under the control of the firm. For the most part, in our view, e-business does not include commercial transactions involving an exchange of value across organizational boundaries. For example, a company's online inventory control mechanisms are a component of e-business, but such internal processes do not directly generate revenue for the firm from outside businesses or consumers, whereas e-commerce, by definition, does. It is true, however, that a firm's e-business infrastructure provides support for online e-commerce exchanges: The same infrastructure and skill sets are involved in both e-business and e-commerce. E-commerce and e-business systems blur together at the business firm boundary, at the point where internal business systems link up with suppliers or customers (see **Figure 1.1**). E-business applications turn into e-commerce precisely when an exchange of value occurs. We will examine this intersection further in Chapter 12.

e-business
the digital enabling of transactions and processes within a firm, involving information systems under the control of the firm

| FIGURE 1.1 | THE DIFFERENCE BETWEEN E-COMMERCE AND E-BUSINESS |

E-commerce primarily involves transactions that cross firm boundaries. E-business primarily involves the application of digital technologies to business processes within the firm.

TECHNOLOGICAL BUILDING BLOCKS UNDERLYING E-COMMERCE: THE INTERNET, THE WEB, AND THE MOBILE PLATFORM

The technology juggernauts behind e-commerce are the Internet, the Web, and the mobile platform. We describe the Internet, the Web, and the mobile platform in some detail in Chapter 3. The **Internet** is a worldwide network of computer networks built on common standards. Created in the late 1960s to connect a small number of mainframe computers and their users, the Internet has since grown into the world's largest network. It is impossible to say with certainty exactly how many computers and other mobile devices (such as smartphones and tablets) as well as other Internet-connected consumer devices (such as smartwatches, connected TVs, and smart speakers like Amazon's Echo) are connected to the Internet worldwide at any one time. However, some experts estimate that as of 2022, there are about 15 billion connected devices (not including smartphones, tablets, or desktop/laptop computers) already installed (Watters, 2022). The Internet links businesses, educational institutions, government agencies, and individuals together and provides users with services such as e-mail, document transfer, shopping, research, instant messaging, music, videos, and news.

The Internet has shown extraordinary growth patterns when compared to other electronic technologies of the past. It took radio 38 years to achieve a 30% share of U.S. households. It took television 17 years to achieve a 30% share. In contrast, it took only 10 years for the Internet/Web to achieve a 53% share of U.S. households once a graphical user interface was invented for the Web in 1993. Today, in the United States, more than 300 million people of all ages (almost 90% of the U.S. population) use the Internet at least once a month (Insider Intelligence/eMarketer, 2022a).

Internet
worldwide network of computer networks built on common standards