

E-commerce 2019

business. technology. society.

FIFTEENTH EDITION

Kenneth C. Laudon • Carol Guercio Traver



E-commerce



business. technology. society. **GLOBAL EDITION**

New York University

Kenneth C. Laudon Carol Guercio Traver

Azimuth Interactive, Inc.



Harlow, England • London • New York • Boston • San Francisco • Toronto Sydney • Dubai • Singapore • Hong Kong • Tokyo • Seoul • Taipei New Delhi • Cape Town • Sao Paulo • Mexico City • Madrid • Amsterdam Munich • Paris • Milan

E-Commerce 2019: Business, Technology and Society, eBook, Global Edition

Table of Contents

Front Cover

Title Page

Copyright Page

Preface

Brief Contents

Contents

1 Introduction to E-commerce

Learning Objectives

Everything on Demand: The Uberization of E-commerce

1.1 The First Thirty Seconds: Why You Should Study E-Commerce

1.2 Introduction to E-Commerce

What Is E-Commerce?

The Difference Between E-Commerce and E-Business

Technological Building Blocks Underlying E-commerce: the Internet, Web, and

Mobile Platform

Major Trends in E-commerce

Insight on Technology: Will Apps Make the Web Irrelevant?

1.3 Unique Features of E-commerce Technology

Ubiquity

Global Reach

Universal Standards

Richness

Interactivity

Information Density

Personalization and Customization

Social Technology: User-generated Content and Social Networks

1.4 Types of E-commerce

Business-to-Consumer (B2C) E-Commerce

Business-to-Business (B2B) E-Commerce

Consumer-to-Consumer (C2C) E-Commerce

Mobile E-Commerce (M-Commerce)

Social E-Commerce

Local E-Commerce

1.5 E-Commerce: A Brief History

E-commerce 19952000: Invention

E-Commerce 20012006: Consolidation

E-Commerce 2007Present: Reinvention

Assessing E-Commerce: Successes, Surprises, and Failures

Insight on Business: Rocket Internet

1.6 Understanding E-Commerce: Organizing Themes

Technology: Infrastructure Business: Basic Concepts

Society: Taming the Juggernaut

Insight on Society: Facebook and the Age of Privacy

1.7 Academic Disciplines Concerned with E-Commerce

Technical Approaches
Behavioral Approaches

1.8 Careers in E-commerce

The Company

Position: Category Specialist in the E-commerce Retail Program

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

Untitled

1.9 Case Study: Puma Goes Omni

1.10 Review

Key Concepts

Questions

Projects

References

2 E-Commerce Infrastructure

Learning Objectives

Tech Titans Target a Prize: Bringing Internet Access to Rural India

2.1 The Internet: Technology Background

The Evolution of the Internet: 1961The Present

The Internet: Key Technology Concepts

Packet Switching

Transmission Control Protocol/internet Protocol (TCP/IP)

Ip Addresses

Domain Names, Dns, and Urls

Client/server Computing

The Mobile Platform

The Internet Cloud Computing Model: Hardware and Software as a Service

Other Internet Protocols and Utility Programs

2.2 Internet Infrastructure and Access

The Internet Backbone

Campus/corporate Area Networks

Mobile Internet Access

Telephone-based versus Computer Network-based Wireless Internet Access

Other Innovative Internet Access Technologies: Drones, Balloons, and White Space

The Internet of Things

Insight on Business: The Apple Watch: Bringing the Internet of Things to Your

Wrist

Who Governs the Internet?

Insight on Society: Government Regulation and Surveillance of the Internet

2.3 The Web

Hypertext

Markup Languages

Hypertext Markup Language (HTML)

Extensible Markup Language (XML)

Web Servers and Clients

Web Browsers

2.4 The Internet and the Web: Features and Services

Communication Tools

E-mail

Messaging Applications

Online Message Boards

Internet Telephony

Video Conferencing, Video Chatting, and Telepresence

Search Engines

Downloadable and Streaming Media

Web 2.0 Applications and Services

Online Social Networks

Blogs

Wikis

Virtual Reality and Augmented Reality

Insight on Technology: Leaping into the Future with AR and VR

Intelligent Digital Assistants

2.5 Mobile Apps: the Next Big Thing Is Here

Platforms for Mobile Application Development

App Marketplaces

2.6 Careers in E-commerce

The Company

Position: E-Commerce Specialist

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

2.7 Case Study: Akamai Technologies: Attempting to Keep Supply Ahead of Demand

2.8 Review

Key Concepts

Questions

Projects

References

3 Building an E-commerce Presence

Learning Objectives

The Financial Times: A Remodel for 21st Century Publishing Profitability

3.1 Imagine Your E-Commerce Presence

Whats the Idea? (The Visioning Process)

Wheres the Money: Business and Revenue Model

Who and Where Is the Target Audience?

What Is the Ballpark? Characterize the Marketplace

Wheres the Content Coming From?

Know Yourself: Conduct a SWOT Analysis

Develop an E-commerce Presence Map

Develop a Timeline: Milestones

How Much Will This Cost?

3.2 Building an E-commerce Presence: A Systematic Approach

The Systems Development Life Cycle

Systems Analysis/planning: Identify Business Objectives, System Functionality,

and Information Requirements

System Design: Hardware and Software Platforms

Building the System: In-house Versus Outsourcing

Insight on Business: Weebly Makes Creating Websites Easy

Testing the System

Implementation, Maintenance, and Optimization

Alternative Web Development Methodologies

3.3 Choosing Software

Simple Versus Multi-tiered Website Architecture

Web Server Software

Site Management Tools

Dynamic Page Generation Tools

Application Servers

E-commerce Merchant Server Software Functionality

Online Catalog

Shopping Cart

Credit Card Processing

Merchant Server Software Packages (e-commerce Software Platforms)

Choosing an E-commerce Software Platform

3.4 Choosing Hardware

Right-sizing Your Hardware Platform: The Demand Side Right-sizing Your Hardware Platform: The Supply Side

3.5 Other E-commerce Site Tools

Website Design: Basic Business Considerations

Tools for Search Engine Optimization

Tools for Interactivity and Active Content

Common Gateway Interface (CGI)

Active Server Pages (ASP) and ASP.NET

Java, Java Server Pages (JSP), and Javascript

ActiveX and VBScript

ColdFusion

PHP, Ruby on Rails (ROR), and Django

Other Design Elements

Personalization Tools

The Information Policy Set

Insight on Society: Designing for Accessibility

3.6 Developing a Mobile Website and Building Mobile Applications

Planning and Building a Mobile Presence

Mobile Presence: Design Considerations

Cross-platform Mobile App Development Tools

Mobile Presence: Performance and Cost Considerations

3.7 Careers in E-commerce

The Company

Position: UX Designer

Insight on Technology: Carnival Cruise Ships Go Mobile

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

3.8 Case Study: Dicks Sporting Goods: Taking Control of Its E-commerce

Operations

3.9 Review

Key Concepts

Questions

Projects

References

4 E-commerce Security and Payment Systems

Learning Objectives

The Rise of the Global Cyberattack: WannaCry and NotPetya

4.1 The E-commerce Security Environment

The Scope of the Problem

The Underground Economy Marketplace: the Value of Stolen Information

What Is Good E-commerce Security?

Dimensions of E-commerce Security

The Tension Between Security and Other Values

Security Versus Ease of Use

Public Safety and the Criminal Uses of the Internet

4.2 Security Threats in the E-commerce Environment

Malicious Code

Potentially Unwanted Programs (PUPs)

Phishing

Hacking, Cybervandalism, and Hacktivism

Data Breaches

Insight on Society: Equifax: Really Big Data Hacked

Credit Card Fraud/Theft

Identity Fraud

Spoofing, Pharming, and Spam (Junk) Websites

Sniffing and Man-in-the-Middle Attacks

Denial of Service (DOS and Distributed Denial of Service (DDOS) Attacks

Insider Attacks

Poorly Designed Software

Social Network Security Issues

Mobile Platform Security Issues

Cloud Security Issues

Insight on Technology: Think Your Smartphone Is Secure?

Internet of Things Security Issues

4.3 Technology Solutions

Protecting Internet Communications

Encryption

Symmetric Key Cryptography

Public Key Cryptography

Public Key Cryptography Using Digital Signatures and Hash Digests

Digital Envelopes

Digital Certificates and Public Key Infrastructure (PKI)

Limitations of PKI

Securing Channels of Communication

Secure Sockets Layer (SSL) and Transport Layer Security (TLS)

Virtual Private Networks (VPNs)

Wireless (Wi-Fi) Networks

Protecting Networks

Firewalls

Proxy Servers

Intrusion Detection and Prevention Systems

Protecting Servers and Clients

Operating System Security Enhancements

Anti-Virus Software

4.4 Management Policies, Business Procedures, and Public Laws

A Security Plan: Management Policies

Insight on Business: Are Biometrics the Solution for E-commerce Security?

The Role of Laws and Public Policy

Private and Private-Public Cooperation Efforts

Government Policies and Controls on Encryption

4.5 E-commerce Payment Systems

Online Credit Card Transactions

Credit Card E-commerce Enablers

PCI-DSS Compliance

Limitations of Online Credit Card Payment Systems

Alternative Online Payment Systems

Mobile Payment Systems: Your Smartphone Wallet

Blockchain and Cryptocurrencies

4.6 Electronic Billing Presentment and Payment

Market Size and Growth

EBPP Business Models

4.7 Careers in E-commerce

The Company

The Position: Cybersecurity Threat Management Team Trainee

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

4.8 Case Study: Alipay and WeChat Pay Lead in Mobile Payments

4.9 Review

Key Concepts

Questions

Projects

References

5 E-commerce Business Strategies

Learning Objectives

Ace & Tate: Disrupting the European Eyewear Industry

5.1 E-commerce Business Models

Introduction

Eight Key Elements of a Business Model

Value Proposition

Revenue Model

Market Opportunity

Insight on Society: Foursquare: Check Your Privacy at the Door

Competitive Environment

Competitive Advantage

Market Strategy

Organizational Development

Management Team

Raising Capital

Categorizing E-commerce Business Models: Some Difficulties

Insight on Business: Crowdfunding Takes Off

5.2 Major Business-to-consumer (B2C) Business Models

E-tailer

Community Provider

Content Provider

Insight on Technology: Connected Cars and the Future of E-commerce

Portal

Transaction Broker

Market Creator

Service Provider

5.3 Major Business-to-Business (B2B) Business Models

E-distributor

E-procurement

Exchanges

Industry Consortia

Private Industrial Networks

5.4 How E-commerce Changes Business: Strategy, Structure, and Process

Industry Structure

Industry Value Chains

Firm Value Chains

Firm Value Webs

Business Strategy

E-commerce Technology and Business Model Disruption

5.5 Careers in E-commerce

The Company

Position: Assistant Manager of E-business

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

5.6 Case Study: Dollar Shave Club: From Viral Video to \$1 Billion in Just Five

Years

5.7 Review

Key Concepts

Questions

Projects

References

6 E-commerce Marketing and Advertising

Learning Objectives

InMobis Global Mobile Ad Network

6.1 Consumers Online: the Internet Audience and Consumer Behavior

Internet Traffic Patterns: the Online Consumer Profile

Intensity and Scope of Usage

Demographics and Access

Type of Internet Connection: Broadband and Mobile Impacts Community Effects: Social Contagion in Social Networks

Consumer Behavior Models

The Online Purchasing Decision

Shoppers: Browsers and Buyers

What Consumers Shop for and Buy Online

Intentional Acts: How Shoppers Find Vendors Online

Why Some People Dont Shop Online

Trust, Utility, and Opportunism in Online Markets

6.2 Digital Commerce Marketing and Advertising Strategies and Tools

Strategic Issues and Questions

The Website as a Marketing Platform: Establishing the Customer Relationship

Traditional Online Marketing and Advertising Tools

Search Engine Marketing and Advertising

Display Ad Marketing

E-mail Marketing

Affiliate Marketing

Viral Marketing

Lead Generation Marketing

Social, Mobile, and Local Marketing and Advertising

Multi-channel Marketing: Integrating Online and Offline Marketing

Other Online Marketing Strategies

Customer Retention Strategies

Insight on Business: Are the Very Rich Different from You and Me?

Pricing Strategies

Long Tail Marketing

Insight on Technology: The Long Tail: Big Hits and Big Misses

6.3 Internet Marketing Technologies

The Revolution in Internet Marketing Technologies

Web Transaction Logs

Supplementing the Logs: Cookies and Other Tracking Files

Databases, Data Warehouses, Data Mining, and Big Data

Databases

Insight on Society: Every Move You Take, Every Click You Make, Well Be

Tracking You

Data Warehouses and Data Mining

The Challenge of Big Data

Marketing Automation and Customer Relationship Management (CRM) Systems

6.4 Understanding the Costs and Benefits of Online Marketing Communications

Online Marketing Metrics: Lexicon

How Well Does Online Advertising Work?

The Costs of Online Advertising

Marketing Analytics: Software for Measuring Online Marketing Results

6.5 Careers in E-commerce

The Company

The Position: Digital Marketing Assistant

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

6.6 Case Study: Programmatic Advertising: Real-Time Marketing

6.7 Review

Key Concepts

Questions

Projects

References

7 Social, Mobile, and Local Marketing

Learning Objectives

Pinterest Expands Around the Globe

7.1 Introduction to Social, Mobile, and Local Marketing

From Eyeballs to Conversations

From the Desktop to the Smartphone and Tablet

The Social, Mobile, Local Nexus

7.2 Social Marketing

Social Marketing Players

The Social Marketing Process

Facebook Marketing

Basic Facebook Features

Facebook Marketing Tools

Starting a Facebook Marketing Campaign

Measuring Facebook Marketing Results

Twitter Marketing

Insight on Technology: Optimizing Social Marketing with Sprout Social

Basic Twitter Features

Twitter Marketing Tools

Starting a Twitter Marketing Campaign

Measuring Twitter Marketing Results

Pinterest Marketing

Basic Pinterest Features

Pinterest Marketing Tools

Starting a Pinterest Marketing Campaign

Measuring Pinterest Marketing Results

Marketing on Other Social Networks: Instagram, Snapchat, and Linkedin

The Downside of Social Marketing

7.3 Mobile Marketing

Overview: M-commerce Today

Insight on Society: Marketing to Children of the Web in the Age of Social

Networks

How People Actually Use Mobile Devices

In-App Experiences and In-App Ads

How the Multi-Screen Environment Changes the Marketing Funnel

Basic Mobile Marketing Features

The Technology: Basic Mobile Device Features

Mobile Marketing Tools: Ad Formats

Starting a Mobile Marketing Campaign

Insight on Business: Mobile Marketing Revs Up with 3D and Augmented Reality

Measuring Mobile Marketing Results

7.4 Local and Location-based Mobile Marketing

The Growth of Local Marketing

The Growth of Location-based (LOCAL) Mobile Marketing

Location-Based Marketing Platforms

Location-Based Mobile Marketing: The Technologies

Why Is Location-based Mobile Marketing Attractive to Marketers?

Location-Based Marketing Tools

A New Lexicon: Location-Based Digital Marketing Features

Proximity Marketing with Beacons

Starting a Location-Based Marketing Campaign

Measuring Location-Based Marketing Results

7.5 Careers in E-commerce

The Company

The Position: Social Media Associate

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

7.6 Case Study: ExchangeHunterJumper.com: Building an International Brand with Social Marketing

7.7 Review

Key Concepts

Questions

Projects

References

8 Ethics, Law, and E-commerce

Learning Objectives

The Right to Be Forgotten: Europe Leads on Internet Privacy

8.1 Understanding Ethical, Social, and Political Issues in E-commerce

A Model for Organizing the Issues

Basic Ethical Concepts: Responsibility, Accountability, and Liability

Analyzing Ethical Dilemmas

Candidate Ethical Principles

8.2 Privacy and Information Rights

What Is Privacy?

Privacy in the Public Sector: Privacy Rights of Citizens

Privacy in the Private Sector: Privacy Rights of Consumers

Information Collected by E-commerce Companies

Key Issues in Online Privacy of Consumers

Marketing: Profiling, Behavioral Targeting, and Retargeting

Social Networks: Privacy and Self Revelation

Mobile Devices: Privacy Issues

Consumer Privacy Regulation and Enforcement: the Ftc

Consumer Privacy Regulation: the U.s. Federal Communications Commission (fcc)

Privacy and Terms of Use Policies

Privacy Protection in Europe: the General Data Protection Regulation (gdpr)

Industry Self-Regulation

Technological Solutions

Privacy Protection as a Business

Privacy Advocacy Groups

Limitations on the Right to Privacy: Law Enforcement and Surveillance

Insight on Technology: Apple: Defender of Privacy?

8.3 Intellectual Property Rights

Types of Intellectual Property Protection

Copyright: the Problem of Perfect Copies and Encryption

Fair Use Doctrine

The Digital Millennium Copyright Act of 1998

Copyright Protection in the European Union

Patents: Business Methods and Processes

E-commerce Patents

Trademarks: Online Infringement and Dilution

Trademarks and the Internet

Cybersquatting and Brandjacking

Cyberpiracy

Metatagging

Keywording

Linking

Framing

Trade Secrets

Challenge: Balancing the Protection of Property with Other Values

8.4 Governance

Can the Internet Be Controlled?

Taxation

Net Neutrality

Insight on Business: New Rules Extend EU Taxation of E-commerce Antitrust, Monopoly, and Market Competition in the Internet Era

8.5 Public Safety and Welfare

Protecting Children

Cigarettes, Gambling, and Drugs: Is the Web Really Borderless?

Insight on Society: The Internet Drug Bazaar Operates Around the Globe

8.6 Careers in E-commerce

The Company

Position: E-commerce Privacy Research Associate

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

8.7 Case Study: Are Big Tech Firms Getting Too Big?

8.8 Review

Key Concepts

Questions

Projects

Review

9 Online Media

Learning Objectives

Spotify and Deezer: European Streaming Music Services Spread Around the Globe

9.1 Online Content

Content Audience: Where Are the Eyeballs?

Content Market: Entertainment and Media Industry Revenues Insight on Society: Are Millennials Really All That Different? Online Content: Consumption, Revenue Models, and Revenue

Digital Rights Management (DRM) and Walled Gardens

Media Industry Structure

Media Convergence: Technology, Content, and Industry Structure

Technological Convergence
Content Convergence

Industry Structure Convergence

9.2 The Online Publishing Industry

Online Newspapers

From Print-centric to Digital First: the Evolution of Newspaper Online Business

Models, 19952017

Online Newspaper Industry: Strengths and Challenges

Insight on Business: Vox: Native Digital News

Magazines Rebound on the Digital Platform

E-books and Online Book Publishing

Amazon and Apple: the New Digital Media Ecosystems

E-book Business Models

Interactive Books: Converging Technologies

9.3 The Online Entertainment Industry

Home Entertainment: Television and Movies

Insight on Technology: Hollywood and Big Tech: Lets Have Lunch

Music

Games

9.4 Careers in E-commerce

The Company

Position: Digital Audience Development Specialist

Qualifications/skills

Preparing for the Interview

Possible First Interview Questions

9.5 Case Study: Netflix: How Does This Movie End?

9.6 Review

Key Concepts

Questions

Projects

References

10 Online Communities

Learning Objectives

LinkedIn: A Tale of Two Countries

10.1 Social Networks and Online Communities

What Is an Online Social Network?

The Growth of Social Networks and Online Communities

Turning Social Networks into Businesses

Types of Social Networks and Their Business Models

Insight on Society: The Dark Side of Social Networks

Social Network Technologies and Features

10.2 Online Auctions

Insight on Technology: Trapped Inside the Facebook Bubble?

Benefits and Costs of Auctions

Benefits of Auctions

Risks and Costs of Auctions

Auctions as an E-commerce Business Model

Types and Examples of Auctions

When to Use Auctions (and for What) in Business

Auction Prices: Are They the Lowest?

Consumer Trust in Auctions

When Auction Markets Fail: Fraud and Abuse in Auctions

10.3 E-commerce Portals

The Growth and Evolution of Portals

Types of Portals: General-Purpose and Vertical Market Insight on Business: Verizon Doubles Down on Portals

Portal Business Models

10.4 Careers in E-commerce

The Company

Position: Social Marketing Specialist

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

10.5 Case Study: eBay Evolves

10.6 Review

Key Concepts

Questions

Projects

References

11 E-commerce Retail and Services

Learning Objectives

Souq.com: The Amazon of the Middle East Gets Acquired by Amazon

11.1 The Online Retail Sector

The Retail Industry

Online Retailing

E-commerce Retail: the Vision

The Online Retail Sector Today

11.2 Analyzing the Viability of Online Firms

Strategic Analysis

Financial Analysis

11.3 E-commerce in Action: E-tailing Business Models

Virtual Merchants

Amazon

The Vision

Business Model

Financial Analysis

Strategic AnalysisBusiness Strategy

Strategic AnalysisCompetition

Strategic AnalysisTechnology

Strategic AnalysisSocial and Legal Challenges

Future Prospects

Omni-Channel Merchants: Bricks-and-clicks

Catalog Merchants

Manufacturer-Direct

Common Themes in Online Retailing

11.4 the Service Sector:Offline and Online

Insight on Technology: Big Data and Predictive Marketing

11.5 Online Financial Services

Fintech

Online Banking and Brokerage

Multi-channel vs. Pure Online Financial Services Firms

Financial Portals and Account Aggregators

Online Mortgage and Lending Services

Online Insurance Services

Online Real Estate Services

11.6 Online Travel Services

Why Are Online Travel Services So Popular?

The Online Travel Market

Online Travel Industry Dynamics

11.7 Online Career Services

Insight on Society: Phony Reviews

Its Just Information: The Ideal Web Business?

Online Recruitment Industry Trends

11.8 On-Demand Service Companies

Insight on Business: Food Delivery on Demand in the Middle East

11.9 Careers in E-commerce

The Company

Position: Associate, E-commerce Initiatives

Qualifications/Skills

Preparing for the Interview

Possible First Interview Questions

11.10 Case Study: OpenTable: Your Reservation Is Waiting

11.11 Review

Key Concepts

Questions

Projects

References

12 B2B E-commerce

Learning Objectives

Alibaba: Chinas E-commerce King

12.1 An Overview of B2B E-commerce

Some Basic Definitions

The Evolution of B2B E-commerce

The Growth of B2B E-commerce

Potential Benefits and Challenges of B2B E-commerce

12.2 The Procurement Process and Supply Chains

Insight on Society: Wheres My iPad? Global Supply Chain Risk and Vulnerability

Steps in the Procurement Process

Types of Procurement

Multi-Tier Supply Chains

Visibility and Other Concepts in Supply Chain Management

The Role of Existing Legacy Computer Systems and Enterprise Systems in Supply Chains

12.3 Trends in Supply Chain Management and Collaborative Commerce

Just-in-Time and Lean Production

Supply Chain Simplification

Supply Chain Black Swans: Adaptive Supply Chains

Accountable Supply Chains: Labor Standards

Sustainable Supply Chains: Lean, Mean, and Green

Electronic Data Interchange (EDI)

Mobile B2B

B2B in the Cloud

Supply Chain Management Systems

Blockchain and Supply Chain Management

Collaborative Commerce

Insight on Technology: Blockchain Takes on the Diamond Supply Chain

Collaboration 2.0:Cloud, Web, Social, and Mobile

Social Networks and B2B: The Extended Social Enterprise

B2B Marketing

12.4 Net Marketplaces: The Selling Side of B2B

Characteristics of Net Marketplaces

Types of Net Marketplaces

E-distributors

E-Procurement

Exchanges

Industry Consortia

12.5 Private Industrial Networks

Objectives of Private Industrial Networks

Private Industrial Networks and Collaborative Commerce

Insight on Business: Walmarts Private Industrial Network Supports Omni-channel

Growth

Implementation Barriers

12.6 Careers in E-commerce

The Company

Position: Junior Supply Chain Analyst

Qualifications/Skills

How to Prepare for the Interview

Possible First Interview Questions

12.7 Case Study: Elemica: Cooperation, Collaboration, and Community

12.8 Review

Key Concepts

Questions

Projects

References

Index