

Electronic Commerce

Lecture 1

IT392

INTRODUCTION TO E-COMMERCE

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Chapter 1

- The E-commerce industry, beginning in 1994, has experienced explosive growth fueled by technological advances and evolving business models.
- The introduction of smartphones revolutionized the industry by enabling mobile commerce, with subsequent developments in social media networking platforms further transforming consumer behavior.
- The integration of on-demand services marked another landmark, setting the tone for local, personal E-commerce.

Chapter 1

- Despite this transformative growth, concerns now surface, addressing regulatory issues surrounding privacy invasion, fake news propagation, security threats, and unchecked growth of business giants like Amazon, Google, and Facebook, now Meta, that may potentially stifle healthy competition.
- As a result, a future phase of regulatory scrutiny awaits E-commerce, potentially coloring its trajectory.

Learning Objectives

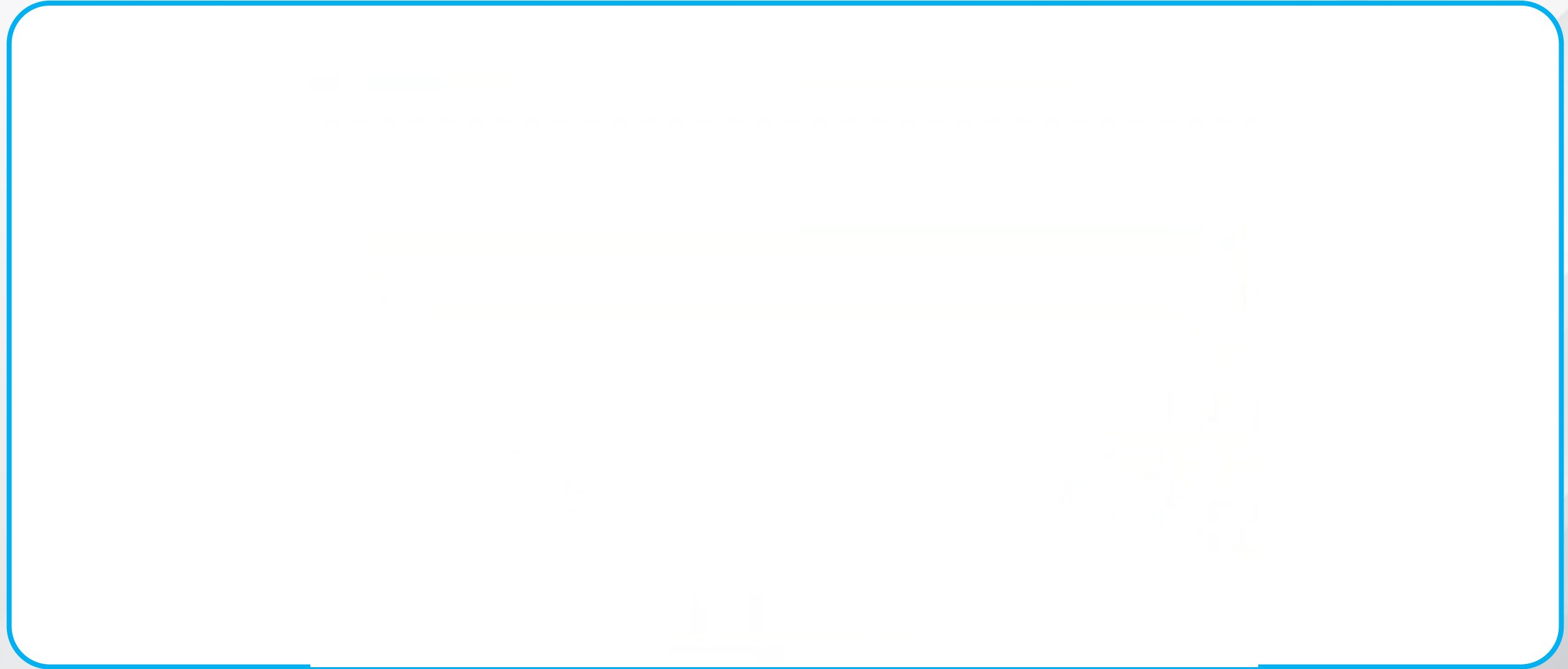
- Understand why it is important to study E-commerce.
- Define E-commerce, understand how E-commerce differs from E-business,
- Identify the primary technological building blocks underlying E-commerce, and recognize major current themes in E-commerce.
- Identify and describe the unique features of E-commerce technology and discuss their business significance.

Learning Objectives

- Describe the major types of E-commerce.
- Understand the evolution of E-commerce from its early years to today.
- Describe the major themes underlying the study of E-commerce.

WHY YOU SHOULD STUDY E-COMMERCE

- The E-commerce revolution began in 1995, its rapid growth offering opportunities for business model innovation and career advancement.
- Technological advancements and entrepreneurial innovation promise similar levels of change in future decades, potentially making most commerce E-commerce by 2050.
- This period of change presents both opportunities and risks, especially in the post-Covid-19 era, which has significantly affected businesses and consumer behavior.
- Studying E-commerce helps understand upcoming opportunities and risks, enabling effective business model identification, technological understanding, and marketing strategies.



Chapter 1: Introduction to E-commerce

INTRODUCTION TO E-COMMERCE

What is E-commerce?

The difference between E-commerce and E-business

Technological building blocks

Virtual Teams and Collaborative Work

MAJOR TRENDS IN E-COMMERCE

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UNIQUE FEATURES OF E-COMMERCE TECHNOLOGY

TYPES OF E-COMMERCE

Business-to-consumer (B2C)

Business-to-business (B2B)

Consumer-to-consumer (C2C)

Mobile E-commerce

Social E-commerce

Local E-commerce

E-COMMERCE: A BRIEF HISTORY

INVENTION

CONSOLIDATION

REINVENTION

UNDERSTANDING E-COMMERCE: ORGANIZING THEMES

INTRODUCTION TO E-COMMERCE

What is E-commerce?

- E-commerce uses the Internet, World Wide Web, and mobile apps for business transactions.
- The Internet is a global network of computers, while the Web provides access to web pages.
- E-commerce is digital commercial transactions between organizations and individuals.
- These transactions involve an exchange of value for products and services.

INTRODUCTION TO E-COMMERCE

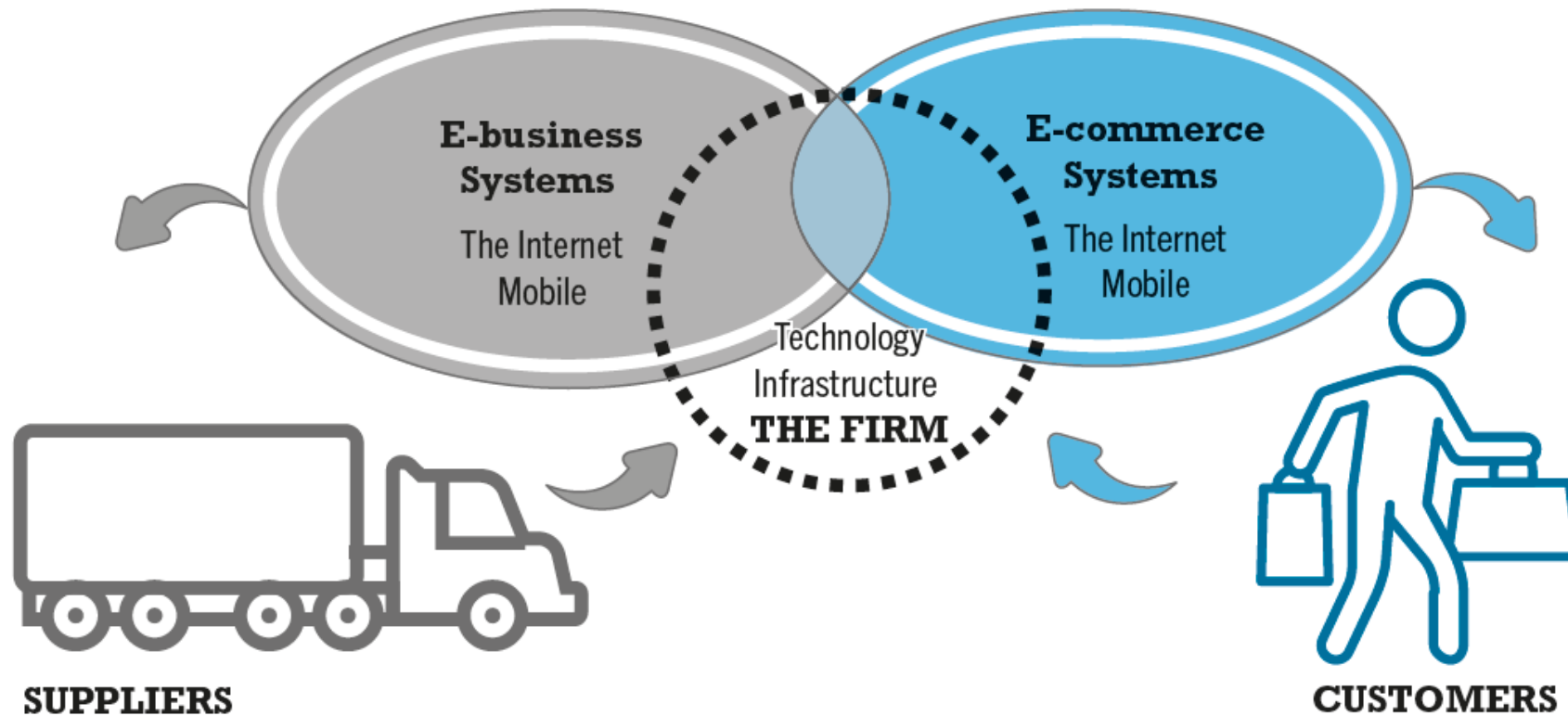
The difference between E-commerce and E-business

- Debate exists over E-commerce and E-business definitions and limitations.
- *E-business* refers to digital transactions and processes within a firm.
- *E-commerce* involves commercial transactions crossing organizational boundaries, generating external revenue.
- E-business applications become E-commerce when an exchange of value occurs.

INTRODUCTION TO E-COMMERCE

FIGURE 1.1

THE DIFFERENCE BETWEEN E-COMMERCE AND E-BUSINESS



INTRODUCTION TO E-COMMERCE

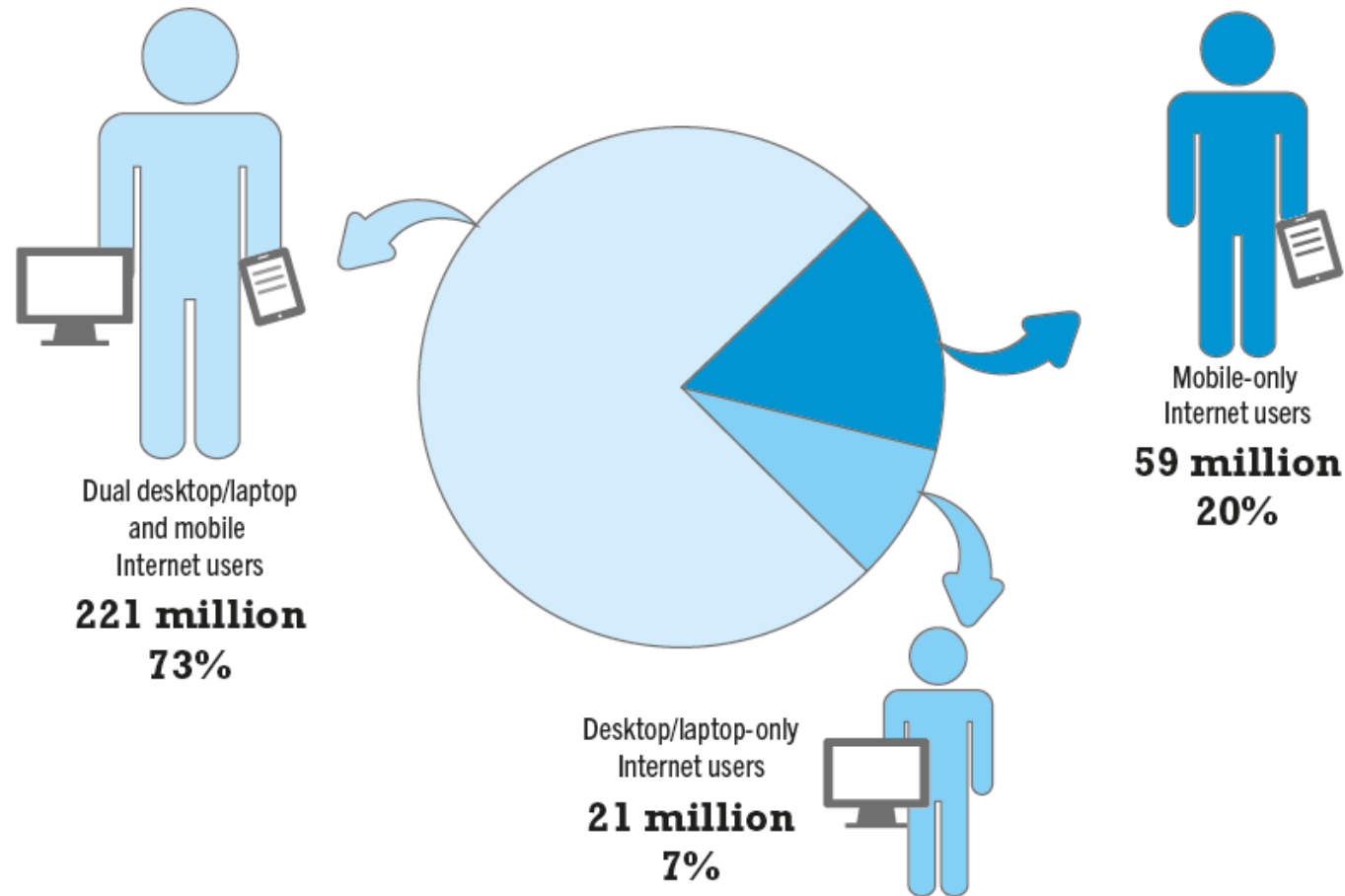
Technological building blocks underlying E-commerce: the internet, the web, and the mobile platform

- **Internet** created in the 1960s, has grown into the world's largest network, with an estimated 15 billion connected devices worldwide, revolutionizing communication and commerce.
- **The Web**, developed in early 1990s, introduced powerful capabilities for commerce and information storage, enabling access to trillions of web pages worldwide.
- **Mobile platforms** have become an essential part of Internet infrastructure, revolutionizing the way people interact with the Internet, with 93% U.S users accessing the Internet through mobile.

INTRODUCTION TO E-COMMERCE

FIGURE 1.3

INTERNET ACCESS IN THE UNITED STATES, 2022



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MAJOR TRENDS IN E-COMMERCE

- E-commerce shows strong growth in 2022-2023 across all forms, with retail m-commerce and social E-commerce increasing significantly.
- The mobile platform drives E-commerce growth, with cloud computing supporting smartphone and tablet use.
- Technological trends include big data analysis, Internet of Things growth, uses of AI, blockchain technologies, and development of a metaverse.
- Societal considerations include changing concepts of privacy, copyright enforcement, sovereign surveillance, and ongoing online security issues.

MAJOR TRENDS IN E-COMMERCE

BUSINESS

- E-commerce and m-commerce growth rates normalize to around 10% post Covid-19 surge.
- Social E-commerce growth generates about \$55 billion in 2022.
- Local E-commerce fueled by on-demand services accelerates.
- B2B E-commerce revenues to reach \$8.5 trillion.
- Mobile advertising constitutes over two-thirds of digital ad spending; could be impacted by new privacy rules.
- Increased decentralization in media business gives rise to the creator economy.



MAJOR TRENDS IN E-COMMERCE

TECHNOLOGY

- Mobile platforms enable online transactions and advertising.
- Cloud computing transforms mobile platforms by providing universal device access.
- The Internet of Things (IoT) growth fuels smart device usage.
- Business analytics software makes sense of big data from online interactions.
- AI technologies aid E-commerce applications like big data analysis and customer service.
- Blockchain's potential in the financial sector and supply chain applications increases interest.
- Facebook rebrands as Meta, focusing on immersive, 3D internet experiences.



MAJOR TRENDS IN E-COMMERCE

SOCIETY

- User-generated content continues to grow, engaging millions of creators and consumers.
- Increasing privacy concerns regarding commercial and governmental invasion.
- Growing concerns about Big Tech's market dominance leading to litigation and regulation calls.
- Ongoing conflicts over copyright management.
- Increasing surveillance of online communications by governments.
- Declining online security due to hacking of major companies.
- On-demand services and E-commerce leading to temporary, low-paid jobs without benefits.



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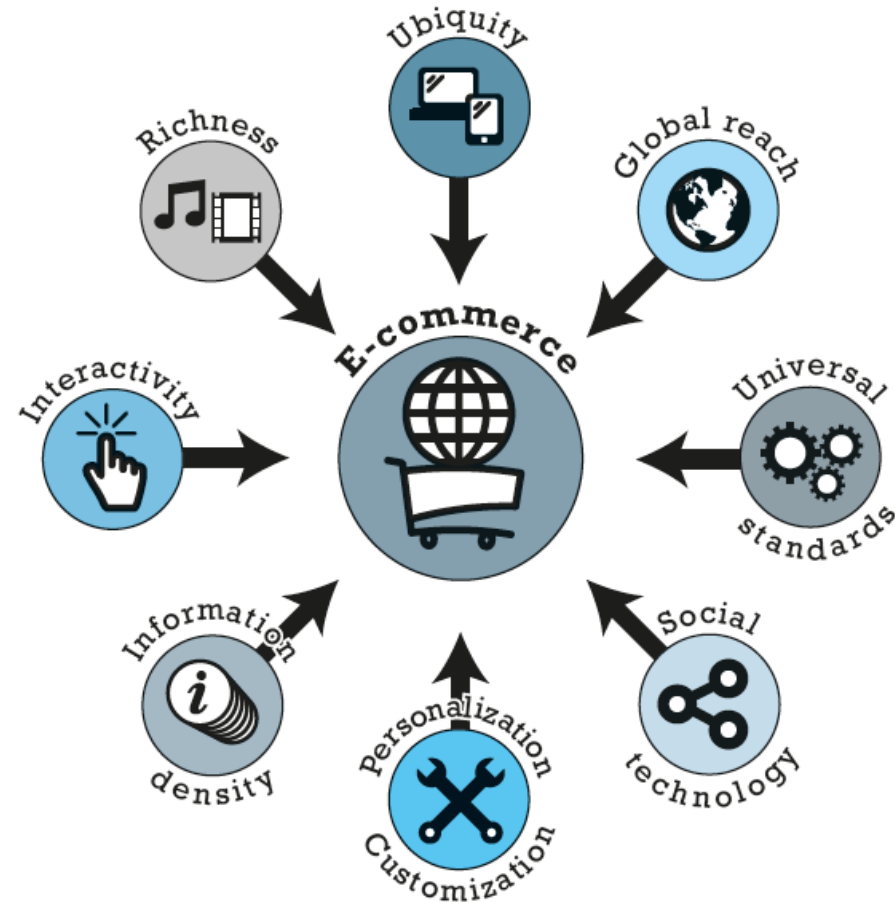
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UNIQUE FEATURES OF E-COMMERCE TECHNOLOGY

FIGURE 1.4

EIGHT UNIQUE FEATURES OF E-COMMERCE TECHNOLOGY



E- commerce technology dimension	Business significance
Ubiquity E-commerce technology is available anytime and everywhere: at work, at home, and elsewhere via mobile devices.	The marketplace is extended beyond traditional boundaries and is removed from a temporal and geographic location. “Marketspace” is created; shopping can take place anywhere. Customer convenience is enhanced, and shopping costs are reduced.
Global reach The technology reaches across national boundaries and around the earth.	Commerce is enabled across cultural and national boundaries seamlessly and without modification. “Marketspace” includes potentially billions of consumers and millions of businesses worldwide.
Universal standards There is one set of technology standards.	There is a common, inexpensive, global technology foundation for businesses to use.
Richness Video, audio, and text messages are possible.	Video, audio, and text marketing messages are integrated into a single marketing message and consuming experience.

E- commerce technology dimension	Business significance
Interactivity The technology enables interaction with the user.	Consumers are engaged in a dialog that dynamically adjusts the experience to the individual consumer and makes the consumer a co-participant in the process of delivering goods to the market.
Information density The technology reduces information costs and raises quality.	Information processing, storage, and communication costs drop dramatically, while currency, accuracy, and timeliness improve greatly. Information becomes plentiful, cheap, and accurate.
Personalization/Customization The technology permits personalization and customization.	Marketing messages can be personalized and products and services customized, based on individual characteristics.
Social technology The technology supports user-generated content (UCG), creators, and social networks.	Enables user content creation and distribution and supports development of social networks.

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Business-to-consumer (B2C) E-commerce:

- Targets individual consumers and is commonly categorized into seven types: online retailers, service providers, transaction brokers, content providers, community providers/social networks, market creators, and portals.



Business-to-business (B2B) E-commerce:

- Focus on selling to other businesses,



TYPES OF E-COMMERCE

Consumer-to-consumer (C2C) E-commerce provides a way for consumers to sell to each other with the help of an online market maker (also called a platform provider).

- In C2C E-commerce, the consumer prepares the product for market, lists the product for auction or sale, and relies on the market maker to provide catalog, search engine, and transaction-clearing capabilities so that products can be easily displayed, discovered, and paid for.



TYPES OF E-COMMERCE

Mobile E-commerce (m-commerce) refers to the use of mobile devices to enable online transactions.

- Factors that are driving the growth of m-commerce:
 - ❖ Increasing amount of time consumers are spending using mobile devices
 - ❖ Larger smartphone screen sizes
 - ❖ Design websites to be better optimized for mobile use and mobile checkout and payment



TYPES OF E-COMMERCE

Social E-commerce is E-commerce that is enabled by social networks and online social relationships.

- The growth of social E-commerce is being driven by a number of factors:
 - ❖ Increasing popularity of social sign-on (signing onto websites using your Facebook or other social network ID),
 - ❖ Network notification (the sharing of approval or disapproval of products, services, and content),
 - ❖ Online collaborative shopping tools, social search (recommendations from online trusted friends),
 - ❖ Virtual shops on Facebook, Instagram, Pinterest, TikTok, YouTube, and other social networks.



TYPES OF E-COMMERCE

Local E-commerce

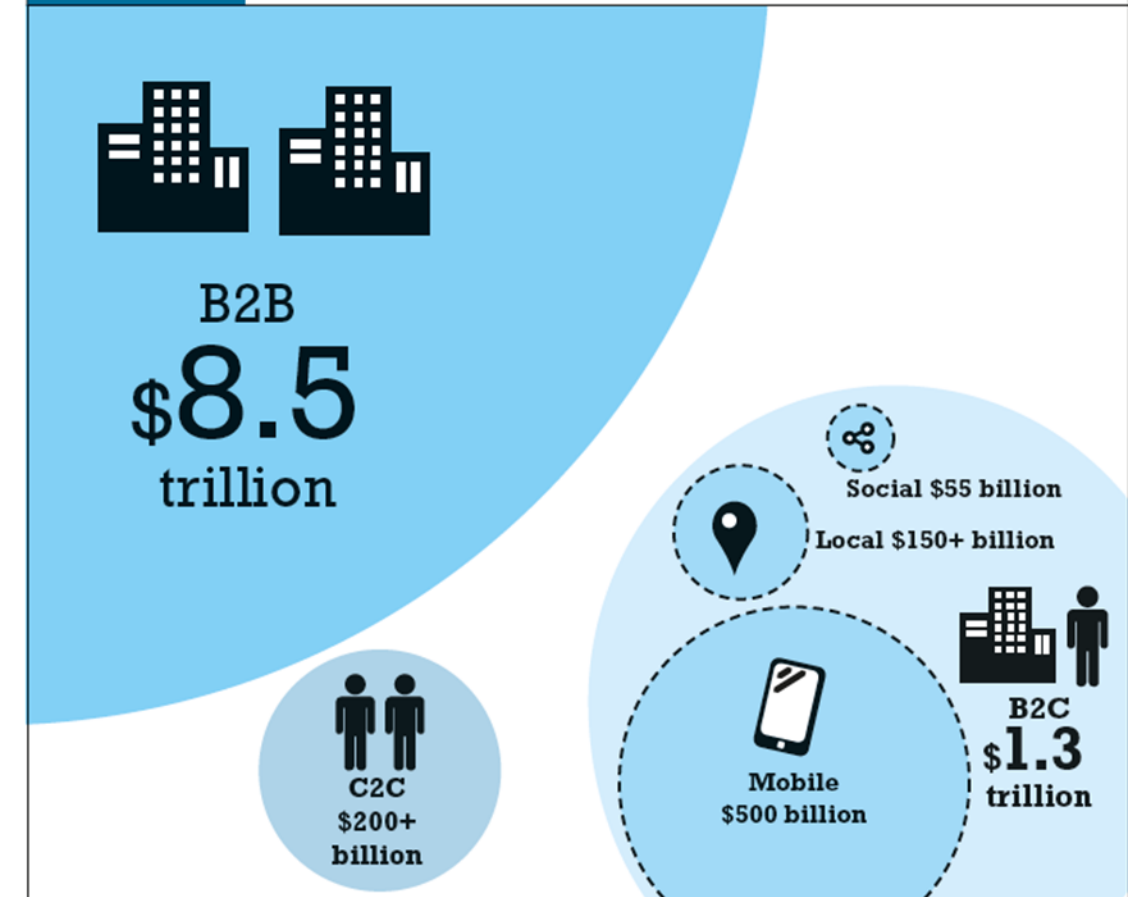
- As its name suggests, is a form of E-commerce that is focused on engaging consumers based on their current geographic location.
- Local merchants use a variety of online marketing techniques to drive consumers to their stores.
- Local E-commerce is the third prong of the mobile, social, local E-commerce wave and, fueled by an explosion of interest in local on-demand services such as Uber.

TYPES OF E-COMMERCE

B2B E-commerce dwarfs all other forms of E-commerce; mobile, social, and local E-commerce, although growing rapidly, are still relatively small in comparison to “traditional” E-commerce.

FIGURE 1.9

THE RELATIVE SIZE OF DIFFERENT TYPES OF E-COMMERCE IN 2022



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E-COMMERCE: A BRIEF HISTORY

E-COMMERCE 1995–2000: INVENTION

- The early years of E-commerce were a period of explosive growth and extraordinary innovation.
- During this Invention period, E-commerce meant selling relatively simple retail goods via the Internet. There simply was not enough bandwidth for selling more complex products.
- Marketing was limited to unsophisticated, static display ads and not very powerful search engines.

E-COMMERCE: A BRIEF HISTORY

E-COMMERCE 2001–2006: CONSOLIDATION

- During this period of consolidation, E-commerce changed to include not just retail products but also more complex services such as travel and financial services.
- This period was enabled by widespread adoption of broadband networks in U.S. homes and businesses, coupled with the growing power and lower prices of personal computers.

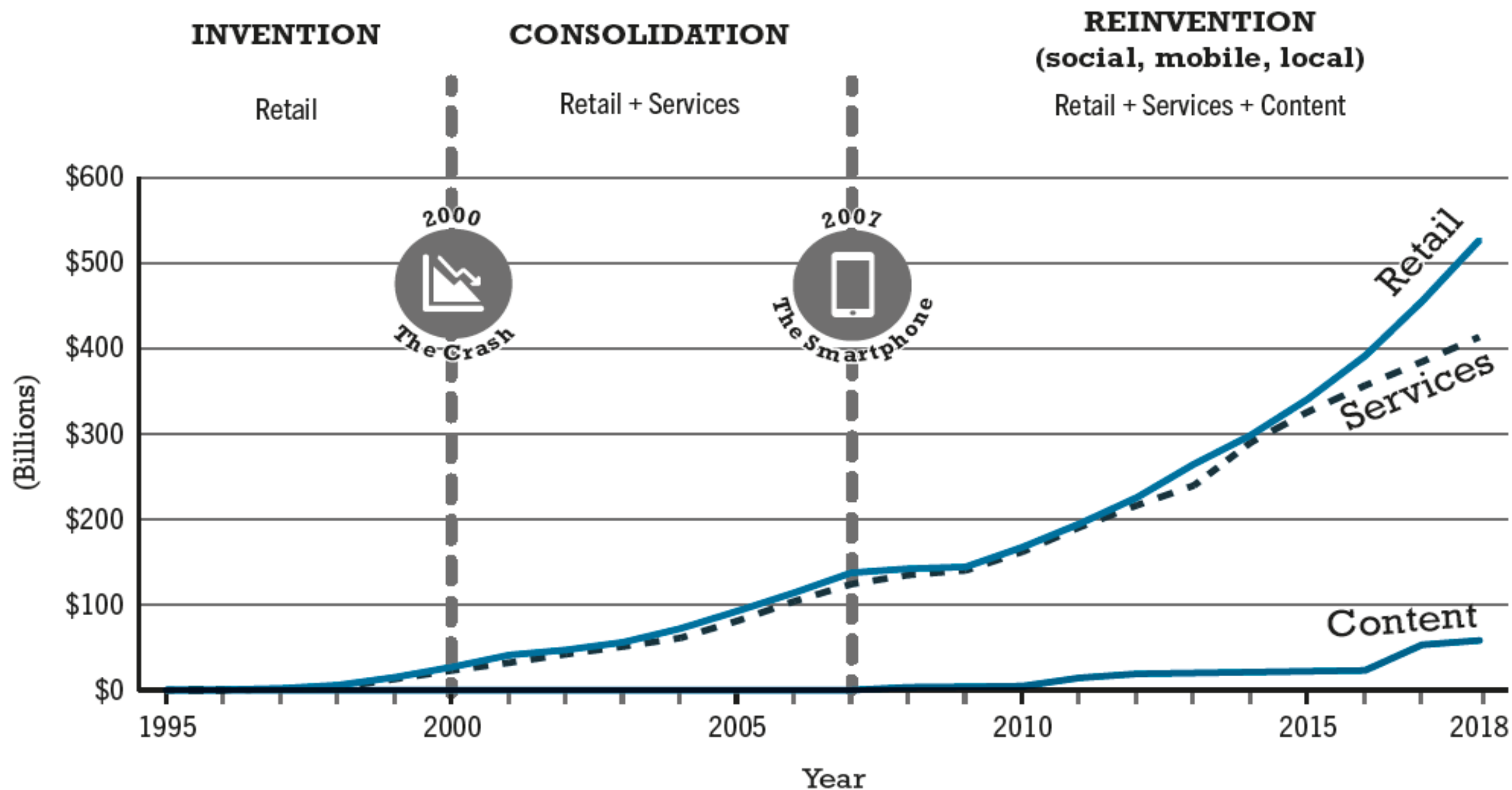
E-COMMERCE: A BRIEF HISTORY

E-COMMERCE 2007–PRESENT: REINVENTION

- Beginning in 2007, with the introduction of the iPhone, to the present day, E-commerce has been transformed yet again by the rapid growth of **Web 2.0** (a set of applications and technologies that enable user-generated content such as that posted on online social networks, blogs, wikis, and video- and photo-sharing websites and apps)
- Widespread adoption of mobile devices such as smartphones and tablet computers

E-COMMERCE: A BRIEF HISTORY

- Firms have greatly expanded their online presence by moving beyond static web pages to social networks such as Facebook, Instagram, TikTok, Twitter, and Pinterest in an attempt to surround the online consumer with coordinated marketing messages.
- They attract extremely large audiences (about 2.9 billion monthly active users worldwide as of July 2022 in the case of Facebook).
- Social networks also predominantly rely on user-generated content. “Regular” people (not just experts or professionals), now often referred to as creators, are producing, sharing, and broadcasting content to huge audiences, which has given rise to what has become known as the creator economy

FIGURE 1.10**PERIODS IN THE DEVELOPMENT OF E-COMMERCE**

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TECHNOLOGY: INFRASTRUCTURE

- The Internet and Web form the core of E-commerce.
- Other complementary technologies used include cloud computing, smartphones, databases, data mining, and fiber-optic cables.
- These technologies support business computing applications like information systems, supply chain management, and customer relationship systems.
- Internet is the latest development in the evolution of corporate computing and business innovation.
- Understanding E-commerce also necessitates knowledge about packet-switched communications, protocols like TCP/IP, cloud computing, mobile platforms, web servers, and software programming tools

BUSINESS: BASIC CONCEPTS

- To truly understand E-commerce, you will need to be familiar with some key business concepts, such as the nature of digital markets, digital goods, business models, firm and industry value chains, value webs, industry structure, digital disruption, and consumer behavior in digital markets, as well as basic concepts of financial analysis.

SOCIETY: TAMING THE JUGGERNAUT

- The primary societal issues are individual privacy, intellectual property, and public policy.
- Issues surrounding the preservation of privacy—the abilities of individuals to place limits on the type and amount of information collected about them and to control the uses of their personal information—have become one of the leading societal issues related to E-commerce.
- Intellectual property, such as music, books, and videos, is nearly zero on the Internet, E-commerce poses special challenges to the various methods societies have used in the past to protect intellectual property rights.



CASE STUDY



UBER

Introduction to Uber and its Business Model

- Uber, an exemplar of the on-demand economy, upends the traditional E-commerce business model by connecting consumers requiring cab services with drivers via a smartphone-based platform.
- It charges a 20% transaction fee, providing a compelling value proposition to both customers and drivers. As of today, it operates in around 10,000 cities across 72 nations, boasting an estimated 4 million drivers and roughly 115 million riders per month.
- However, Uber is a disruptive force in the traditional taxi business, utilizing dynamic pricing and reducing the uncertainty associated with availing a taxi, despite occasional availability issues during peak demand periods.

Challenges with Uber's Business Model

- Uber's business model, classifying its drivers as independent contractors, enables it to shift the operational costs to the drivers and avoid expenses related to social security, minimum wage, driver training, and commercial licensing.
- However, this classification is being challenged legally, while Uber itself is facing multiple lawsuits for alleged driver mistreatment, underpayment, and violation of state employment laws.
- Governments worldwide are also concerned, fearing loss of regulatory control over passenger safety, driver training, and revenues derived from taxi licenses and sales taxes.

Controversies and Economic Implications of Uber

- Uber has faced several controversies, leading to the resignation of key board members, senior executives, and CEO.
- Critics fear the societal impact of firms like Uber, potentially creating an economy of part-time, low-paid jobs, displacing traditional full-time, secure jobs. This has been termed as the "uberization" of work.
- While Uber faces a backlash, it continues to attract drivers, customers, and investors. However, the Covid-19 pandemic wrecked its business considerably, causing a significant fall in demand for ride services.

Uber's Expansion into Other Service Domains

- Uber has expanded beyond its taxi service, seeing itself as a platform for various services associated with the movement of people and things. Its offerings now include food delivery (Uber Eats) and freight services (Uber Freight).
- Uber continues to face stiff competition and considerable challenges in these areas. Although all its business segments show growing revenues, each segment continues to operate at a loss.
- Despite these challenges, Uber continues to persist, leaving many to wonder whether it will ever consistently turn a profit.

REVIEW

Understand why it is important to study E-commerce.

- Exploit digital technology for market advantage. It is important to study E-commerce in order to be able to perceive and understand these opportunities and the risks that lie ahead.

REVIEW

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.

- E-commerce involves digitally enabled commercial transactions between and among organizations and individuals.
- E-business refers 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, unlike E-commerce, E-business does not involve commercial transactions across organizational boundaries where value is exchanged.

REVIEW

- The technology juggernauts behind E-commerce are the Internet, the Web, and the mobile platform.
- From a business perspective, one of the most important trends to note is that all forms of E-commerce continue to show very strong growth.
- From a technology perspective, the mobile platform has finally arrived with a bang, driving growth in mobile advertising and making true mobile E-commerce a reality.
- At a societal level, major issues include privacy and government surveillance, protection of intellectual property, online security, and governance of the Internet.

REVIEW

Identify and describe the unique features of E-commerce technology and discuss their business significance

- ***Ubiquity***—available just about everywhere and at all times, making it possible to shop from your desktop, at home, at work, or even in your car.
- ***Global reach***—permits commercial transactions to cross cultural and national boundaries far more conveniently and cost-effectively than is true in traditional commerce.
- ***Universal standards***—shared by all nations around the world, in contrast to most traditional commerce technologies, which differ from one nation to the next.
- ***Richness***—enables an online merchant to deliver marketing messages in a way not possible with traditional commerce technologies.

REVIEW

Identify and describe the unique features of E-commerce technology and discuss their business significance

- ***Interactivity***—allows for two-way communication between merchant and consumer and enables the merchant to engage a consumer in ways similar to a face-to-face experience but on a much more massive, global scale.
- ***Information density***—the total amount and quality of information available to all market participants.
- ***Personalization and customization***—the increase in information density enables a level of personalization and customization unthinkable with previously existing commerce technologies.
- ***Social technology***—provides a many-to-many model of mass communications. Millions of users are able to generate content consumed by millions of other users. The result is the formation of social networks on a wide scale and the aggregation of large audiences on social network platforms

REVIEW

There are six major types of E-commerce:

- ***B2C E-commerce*** involves online businesses selling to consumers and is the type of E-commerce that most consumers are likely to encounter.
- ***B2B E-commerce*** involves online businesses selling to other businesses and is the largest form of E-commerce.
- ***C2C E-commerce*** is a means for consumers to sell to each other with the help of an online market maker.
- ***M-commerce*** involves the use of mobile devices to enable online transactions.
- ***Social E-commerce*** is E-commerce that is enabled by social networks and online social relationships.
- ***Local E-commerce*** is a form of E-commerce that is focused on engaging consumers based on their current geographic location.

REVIEW

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

- E-commerce has gone through three stages: invention, consolidation, and reinvention.
- The early years of E-commerce were a technological success, with the digital infrastructure created during the period solid enough to sustain significant growth in E-commerce during the next decade, and mixed business success, with significant revenue growth and customer usage but low profit margins.
- E-commerce entered a period of consolidation beginning in 2001 and extending into 2006.
- E-commerce entered a period of reinvention in 2007 with the emergence of the mobile platform, social networks, and Web 2.0 applications that attracted huge audiences in a very short time span.

REVIEW

Describe the major themes underlying the study of E-commerce

- ***Technology***—To understand E-commerce, you need a basic understanding of the information technologies upon which E-commerce is built, including the Internet, the Web, the mobile platform, and a host of complementary technologies—cloud computing, desktop computers, smartphones, tablet computers, local area networks, client/server computing, packet-switched communications, protocols such as TCP/IP, web servers, HTML, and relational and non-relational databases, among others.

REVIEW

Describe the major themes underlying the study of E-commerce

- ***Business***—While technology provides the infrastructure, it is the business applications—the potential for extraordinary returns on investment—that create the interest and excitement in E-commerce. Therefore, you also need to understand some key business concepts such as digital markets, information goods, business models, firm and industry value chains, industry structure, and consumer behavior in digital markets.
- ***Society***—Understanding the pressures that global E-commerce places on contemporary society is critical to being successful in the E-commerce marketplace. The primary societal issues are intellectual property, individual privacy, and public policy.

Reference

