Chapter 1

Introduction

Learning Objectives

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

1.2 Know the definition of e-commerce.

1.3 Know the features of e-commerce technology.

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 Identify the major academic disciplines contributing to e-commerce.

Beginning

- First 20 years of e-commerce
  - In 1994, e-commerce as we now know it did not exist.
  - In 2019, 25 years later, over 2 billion consumers worldwide spent around $4.3 trillion, and businesses around $27 trillion, purchasing goods and services via a desktop computer or mobile device.

- Development
  - E-commerce - The late 1990s - Early Stage
  - The stock market crash of 2000–2001
  - After the bubble burst, many people were quick to write off e-commerce. The surviving firms refined and honed their business models.
  - Between 2002–2007, retail e-commerce grew at more than 25% per year.

Beginning

- Development
  - In the last ten years, mobile devices mobile apps have supplanted the traditional desk top platform and web browser as the most common method for consumers to access the Internet. Today, mobile, social, and local are the driving forces in e-commerce.

    在過去的十年，移動設備的移動應用程序取代了傳統的桌面平臺和網絡瀏覽器，成爲消費者訪問互聯網的最常用方法. 如今，移動、社交和本地化是電子商務的驅動力.

  - The mobile platform infrastructure gave birth to another e-commerce innovation: on-demand services that are local and personal.

    移動平臺基礎設施催生了另一個電子商務創新：本地個人化的按需服務.

Why Study E-commerce

- – Understand opportunities and risks
  了解即將來臨的機會與挑戰
- – Know e-commerce ideas, models, issues
  知道電子商務的理念、模式、問題

The twenty-first century will be the age of a digitally enabled social and commercial life. In 2022, consumers worldwide will be spending almost $5.4 trillion and businesses more than five times that. It appears likely that e-commerce will eventually impact nearly all commerce, and that most commerce will be e-commerce by the year 2050.

21世紀將是數字化社會和商務活動的時代. 2022年，全球消費者在數字交易上花費近5.4萬億美元，企業花費是这个数字的五倍多. 電子商務似乎最終將影響幾乎所有的商業，到2050年，大多數商業將是電子商務.

Introduction to E-Commerce

- What is E-Commerce
  - 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.

    電子商務指利用互聯網、萬維網及在移動設備上運行的app和移動瀏覽器來進行的交易.

- Internet and World Wide Web are different
  - The Internet is a world wide network of computer networks, and the Web is an information system that runs on the Internet infrastructure.

    Internet是指由全世界計算機網絡構成的網絡，萬維網是一個在互聯網基礎設施上運行的信息系統.

Introduction to E-Commerce

- More formally:
  - E-commerce (Electronic Commerce) is digitally enabled commercial transactions between and among organizations and individuals.

    電子商務指的是在組織和個人之間以數字化方式進行的數商務交易.

- Digitally enabled transactions include all transactions mediated by digital technology.
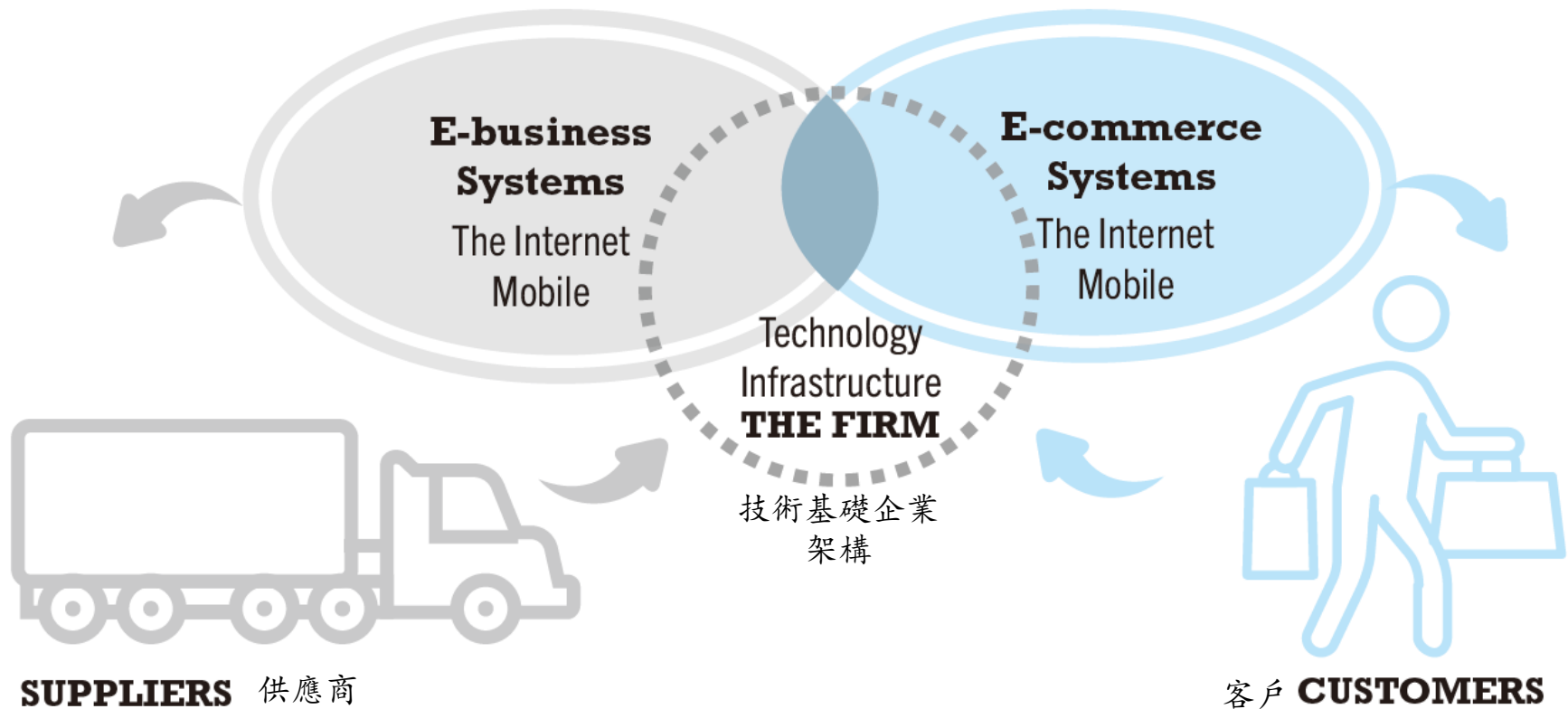
  數字化交易是指所有以數字技術為媒介的交易.

- Commercial transactions involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services.

  商務交易是指組織和個人之間以產品和服務作為回報的價值交換（比如貨幣）.

The Difference Between E-Commerce and E-Business

- E-business 電子業務:
  - Digital enabling of transactions and processes within a firm, involving information systems under firm's control.
    指企業內部的數字化交易和處理流程,包括企業內部的信息系統.
  - Does not include commercial transactions involving an exchange of value across organizational boundaries.
    電子業務不包括跨越組織邊界的有價值交換的商務交易.

The Difference Between E-Commerce and E-Business

E-business Systems
The Internet
Mobile

E-commerce Systems
The Internet
Mobile

Technology Infrastructure
THE FIRM

技術基礎企業架構

SUPPLIERS 供應商

客戶 **CUSTOMERS**

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. E-business applications turn into e-commerce precisely when an exchange of value occurs.
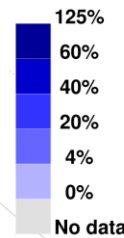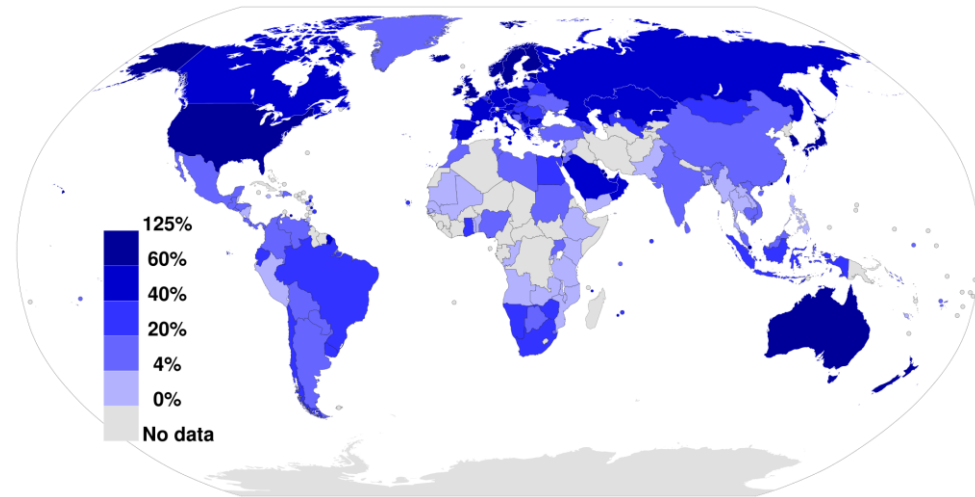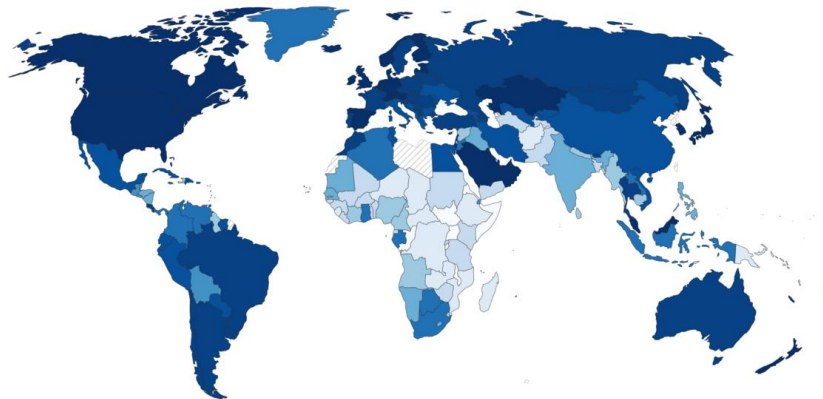
Technological Building Blocks Underlying E-Commerce

- Internet

- World Wide Web

- Mobile platform

Share of the population using the Internet, 2021
Share of the population who used the Internet in the last three months.

Our World in Data

No data 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Source: International Telecommunication Union (via World Bank)

OurWorldInData.org/internet • CC BY

Internet users in 2021 as a percentage of a country's population

125%
60%
40%
20%
4%
0%
No data

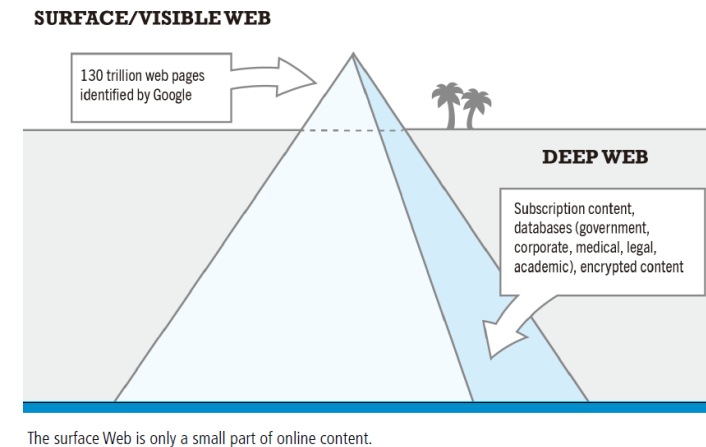Mobile broadband Internet subscriptions in 2012

Technological Building Blocks Underlying E-Commerce

- Internet: A world wide 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 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 such as Amazon's Echo, are connected to the Internet worldwide at any one time.
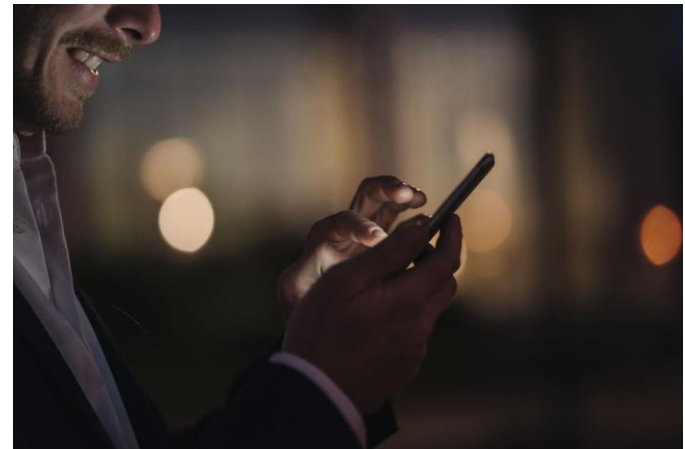
Technological Building Blocks Underlying E-Commerce

- World Wide Web: An information system that runs on the Internet infrastructure
  - Developed in the early 1990s, and hence is of much more recent vintage than the Internet.
  - The Web was the original "killer app" that made the Internet commercially interesting and extraordinarily popular.
  - Provide access to billions of web pages indexed by Baidu, Google and other search engines. These pages are created in a language called HTML (HyperText Markup Language). HTML pages can contain text, graphics, and other objects.
  - Add color, voice, and video to the Internet.
  - The total size of the Web is not known.

SURFACE/VISIBLE WEB

130 trillion web pages identified by Google

DEEP WEB

Subscription content, databases (government, corporate, medical, legal, academic), encrypted content

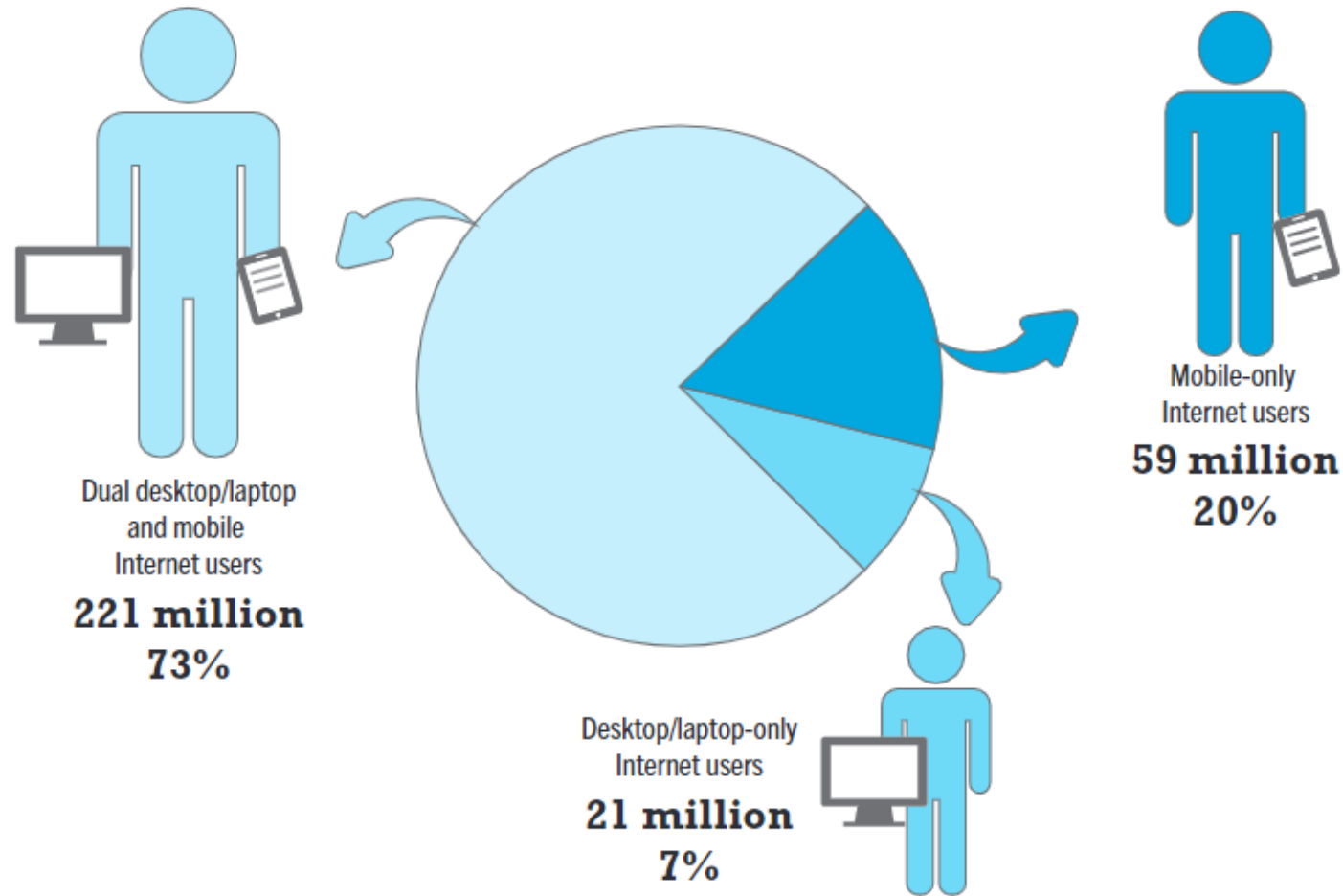The surface Web is only a small part of online content.

Technological Building Blocks Underlying E-Commerce 電子商務的技術基石

- Mobile platform
  - Provide the ability to access the Internet from a variety of mobile devices via wireless networks or cell phone service.
  - The mobile platform has become a significant part of Internet infrastructure. Mobile devices are playing an increasingly prominent role in Internet access. In 2020, about 93% of Americans who accessed the Internet used a mobile device to do so at least some of the time.

Technological Building Blocks Underlying E-Commerce

Dual desktop/laptop and mobile Internet users
221 million 73%

Mobile-only Internet users
59 million 20%

Desktop/laptop-only Internet users
21 million 7%

INTERNET ACCESS IN THE UNITED STATES (2022)

Major Trends in E-Commerce

- Business trends include:
  - From a business perspective, all forms of e-commerce show very strong growth

    從商務的角度看，各種形式的電子商務呈現穩健的增長態勢

BUSINESS

- Retail e-commerce continues to grow worldwide, with a global growth rate of over 20%, and even higher in Asia-Pacific.
- Retail m-commerce sales skyrocket, reaching over $2.2 trillion in 2019.
- The mobile app ecosystem continues to grow, with over 2.5 billion people worldwide using mobile apps in 2019.
- Social e-commerce, based on social networks and supported by advertising, emerges and continues to grow, generating an estimated $16.5 billion from social commerce in the United States in 2018.
- Local e-commerce, the third dimension of the mobile-social-local e-commerce wave, is also growing, fueled by an explosion of interest in on-demand services such as Uber.
- B2B e-commerce revenues continue to expand, reaching about $27 trillion worldwide in 2019.
- On-demand service firms like Uber and Airbnb attract billions in capital, garner multi-billion dollar valuations, and show explosive growth.
- Mobile advertising continues growing at astronomical rates, accounting for over 70% of all digital ad spending.
- Small businesses and entrepreneurs continue to flood into the e-commerce marketplace, often riding on the infrastructures created by industry giants such as Apple, Facebook, Amazon, Google, and eBay.

Major Trends in E-Commerce

- Technology trends include:
  - From a technology perspective, mobile platform has made mobile e-commerce reality

    從技術角度看，移動平臺讓移動電子商務成爲現實

TECHNOLOGY

- A mobile computing and communications platform based on smartphones, tablet computers, wearable devices, and mobile apps becomes a reality, creating an alternative platform for online transactions, marketing, advertising, and media viewing. The use of mobile messaging services such as Facebook Messenger, WhatsApp, and Snapchat continues to expand, and these services are now used by almost two-thirds of smartphone users.
- Smart speakers such as Amazon Echo and Google Home become increasingly popular, providing an additional platform for e-commerce.
- Cloud computing completes the transformation of the mobile platform by storing consumer content and software on "cloud" (Internet-based) servers and making it available to any consumer-connected device from the desktop to a smartphone.
- The Internet of Things (IoT), comprised of billions of Internet-connected devices, continues to grow exponentially.
- As firms track the trillions of online interactions that occur each day, a flood of data, typically referred to as big data, is being produced.
- In order to make sense out of big data, firms turn to sophisticated software called business analytics (or web analytics) that can identify purchase patterns as well as consumer interests and intentions in milliseconds.

Major Trends in E-Commerce

- Societal trends include:
  - At the societal level, increased online social interaction and sharing

    從社會角度看，增加在綫社交互動和分享

SOCIETY

- User-generated content, published online as social network posts, tweets, blogs, and pins, as well as video and photo-sharing, continues to grow and provides a method of self-publishing that engages millions.
- Social networks encourage self-revelation, threatening privacy, as Facebook comes under fire for allowing third parties such as Cambridge Analytica to mine its database of user information without user consent.
- The EU General Data Protection Regulation takes effect, impacting all companies that operate in any of the EU member nations.
- Concerns increase about the increasing market dominance of Facebook, Amazon, and Google, leading to calls for government regulation in both the European Union and United States.
- Conflicts over copyright management and control continue, but there is substantial agreement among online distributors and copyright owners that they need one another.
- Surveillance of online communications by both repressive regimes and Western democracies grows.
- Concerns over commercial and governmental privacy invasion increase.
- Online security continues to decline as major companies are hacked and lose control over customer information.
- Spam remains a significant problem.
- On-demand service e-commerce produces a flood of temporary, poorly paid jobs without benefits.

Unique Features of E-Commerce Technology

1. Ubiquity 普遍存在性

2. Global reach 全球覆蓋性

3. Universal standards 通用標準

4. Richness 豐富性

5. Interactivity 交互性

6. Information density 信息密度

7. Personalization/customization 個性化/定制化

8. Social technology 社交技術

Unique Features of E-Commerce Technology
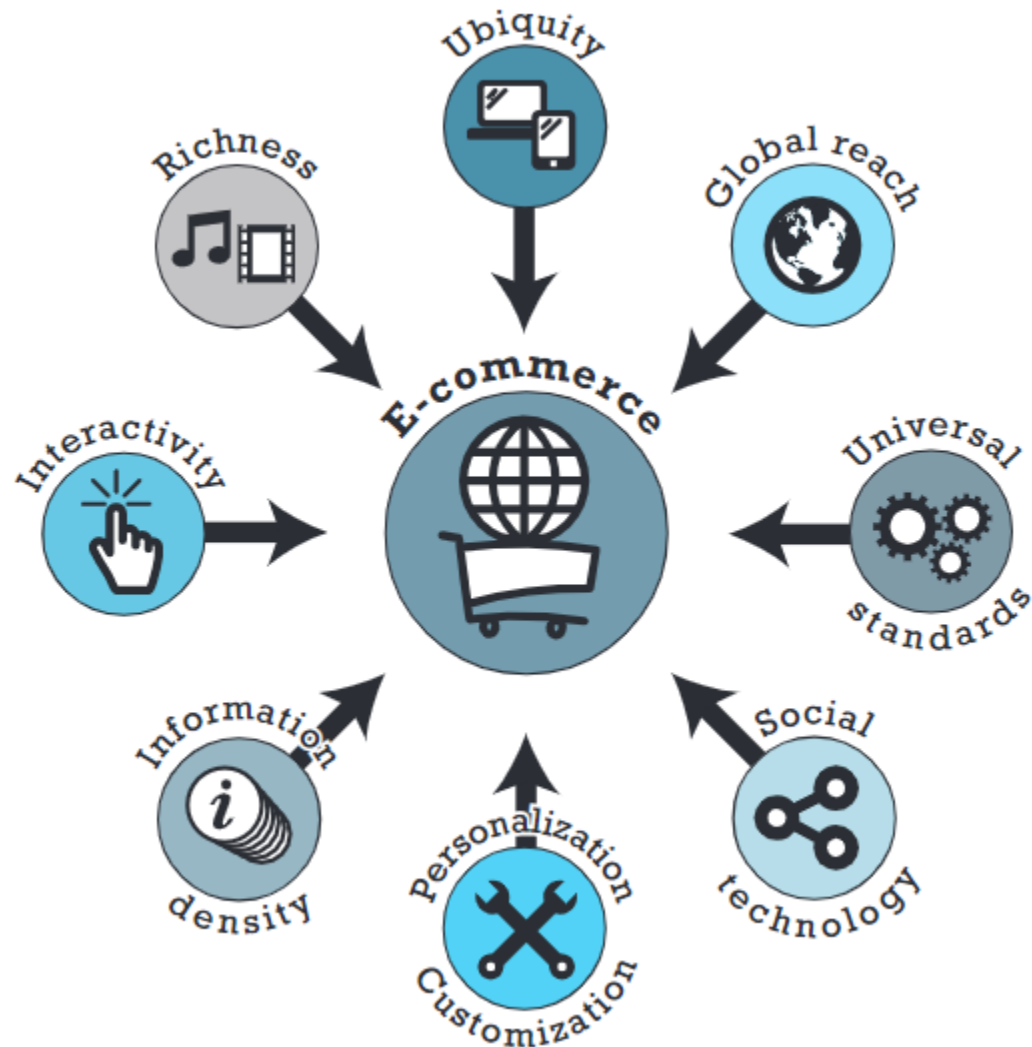
Unique Features of E-Commerce Technology

1. Ubiquity 普遍存在性

- In traditional commerce, a **marketplace** is a physical place you visit in order to transact. E-commerce, in contrast, is characterized by its **ubiquity**: it is available just about everywhere, at all times. Customers can shop from your desktop, at home, at work, or even from your car, using mobile e-commerce. The result is called a **marketspace.**

  傳統商務活動中，市場是人們進行交易的實際場所.相比之下，電子商務具有普遍存在性：這意味著可以隨時隨地進行商務活動.消費者可以使用移動設備在家裏、工作場所甚至是在車上購買商品，這就形成了所謂的虛擬市場.

- From a consumer point of view, ubiquity reduces transaction costs—the costs of participating in a market. To transact, it is no longer necessary that you spend time and money traveling to a market. At a broader level, the ubiquity of e-commerce lowers the cognitive energy required to transact in a marketspace.

  從消費者的角度來看，普遍存在性降低了交易成本——參與市場所需的成本.要進行交易，不再需要前往實體市場花費時間和金錢.在更廣泛的層面上，電子商務的普遍存在性降低了在虛擬市場進行交易所需的認知精力.

Unique Features of E-Commerce Technology

2. Global reach 全球覆蓋性

- Most traditional commerce is local or regional—it involves local merchants or national merchants with local outlets. E-commerce technology permits commercial transactions to cross cultural, regional, and national boundaries far more conveniently and cost-effectively than is true in traditional commerce. The potential market size for e-commerce merchants is roughly equal to the size of the world's online population.

  大部分傳統商務只局限於當地或本地區——參與者是當地商家或由當地企業構成的本地區商家.與傳統商務相比, 電子商務技術使得商業交易跨越文化、地區和國界, 而且成本效益更高.電子商務企業面臨的潛在市場規模大致相當于全球的網民數.

Unique Features of E-Commerce Technology

3. Universal standards 通用標準

- Most one strikingly unusual feature of e-commerce technologies is that the technical standards of the Internet, and therefore the technical standards for conducting e-commerce, are universal standards—they are shared by all nations around the world. In contrast, most traditional commerce technologies differ from one nation to the next.

  電子商務技術的一個顯著特點就是互聯網的技術標準，因此約束電子商務的技術標準就變成了通用標準，全球所有國家都要遵循該標準.相比之下，大多數傳統商務技術因國家而異.

- The universal technical standards of e-commerce greatly lower market entry costs—the cost merchants must pay just to bring their goods to market. At the same time, for consumers, universal standards reduce search costs—the effort required to find suitable products.

  電子商務的通用技術標準大大降低了市場進入成本——商家爲將商品推向市場所必須支付的成本.同時，對于消費者而言，通用標準降低了搜索成本——尋找合意商品所付出的努力.

Unique Features of E-Commerce Technology

4. Richness 豐富性

- Information richness refers to the complexity and content of a message. E-commerce technologies have the potential for offering considerably more information richness than traditional media such as printing presses, radio, and television because they are interactive and can adjust the message to individual users.

  信息豐富性是指信息的內容及其複雜程度.與傳統媒體（印刷機、廣播和電視等）相比，電子商務技術具有提供更多信息豐富性的能力，因爲它是交互式的，並且可以調整向個人用戶傳達的信息.

Unique Features of E-Commerce Technology

5. Interactivity 交互性

- E-commerce technologies allow for interactivity, meaning they enable two-way communication between merchant and consumer and among consumers. Interactivity allows an online merchant to engage a consumer in ways similar to a face-to-face experience.

  電子商務技術是一種支持交互性的技術，這意味著它們可以實現商家與消費者之間以及消費者之間的雙向溝通.交互性允許網絡商家與消費者以類似于面对面的方式進行溝通.

Unique Features of E-Commerce Technology

6. Information density 信息密度

- E-commerce technologies vastly increase information density—the total amount and quality of information available to all market participants, consumers and merchants alike. E-commerce technologies reduce information collection, storage, processing, and communication costs. At the same time, these technologies greatly increase the currency, accuracy, and timeliness of information. As a result, now, information becomes more plentiful, less expensive, and of higher quality. One of the shifts that e-commerce is bringing about is a reduction in information asymmetry among market participants (consumers and merchants). Prices and costs become more transparent.

  電子商務技術極大地提高了信息密度——所有市場參與者（如消費者和商家）可以獲得的信息總量和質量大大提高.電子商務技術降低了信息收集、存儲、處理和交流的成本.同時，這些技術大大提高了信息的流通性、準確性和及時性.因此，如今獲得的信息變得更豐富、成本更低且質量更高.電子商務帶來的變化之一是減少市場參與者（消費者和商家）之間的信息不對稱. 價格和成本變得更加透明.

Unique Features of E-Commerce Technology

7. Personalization/customization 個性化/定制化

- E-commerce technologies permit personalization: merchants can target their marketing messages to specific individuals by adjusting the message to a person's name, interests, and past purchases. The technology also permits customization—changing the delivered product or service based on a user's preferences or prior behavior.

  電子商務技術允許個性化: 商家可以根據個人姓名、興趣和以往的購買經歷來調整所提供的信息, 針對特定個體提供定向營銷信息.利用該技術也可實現定制化: 根據用戶的偏好或先前行爲更改交付的產品或服務.

Unique Features of E-Commerce Technology

8. Social technology 社交技術

- All previous mass media in modern history, including the printing press, used a broadcast model (one-to-many): content is created in a central location by experts (professional writers, editors, directors, actors, and producers) and audiences are concentrated in huge aggregates to consume a standardized product. However, e-commerce technologies have evolved to be much more social by allowing users to create and share content with a worldwide community. Using these forms of communication, users are able to create new social networks and strengthen existing ones.

  現代歷史上所有大眾媒體（如印刷機）都使用廣播模式（一對多）：內容由專家（專業作家、編輯、導演、演員和製片人）在中心位置創建，而受眾則是在其周邊大量聚集以消耗標準化的產品.然而，電子商務技術更具社交性，可讓用戶在全球社區內生成和共享內容.這些交流形式可幫助用戶創建新的社交關係并鞏固現有的社交關係.

Unique Features of E-Commerce Technology

The unique features of e-commerce technology and their business significance

|	
Ubiquity—E-commerce technology is available everywhere: at work, at home, and elsewhere via mobile devices, anytime.	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, 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.
Interactivity—The technology works through interaction with the user.	Consumers are engaged in a dialog that dynamically adjusts the experience to the individual 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 allows personalized messages to be delivered to individuals as well as groups.	Enables personalization of marketing messages and customization of products and services based on individual characteristics.
Social technology—User-generated content and social networks.	Enables user content creation and distribution and supports development of social networks.

Types of E-Commerce

We distinguish different types of e-commerce by the nature of the market relationship—who is selling to whom.

- Business-to-Consumer (B2C)

- Business-to-Business (B2B)

- Consumer-to-Consumer (C2C)

- Mobile e-commerce (M-commerce)

- Social e-commerce

- Local e-commerce

Types of E-Commerce

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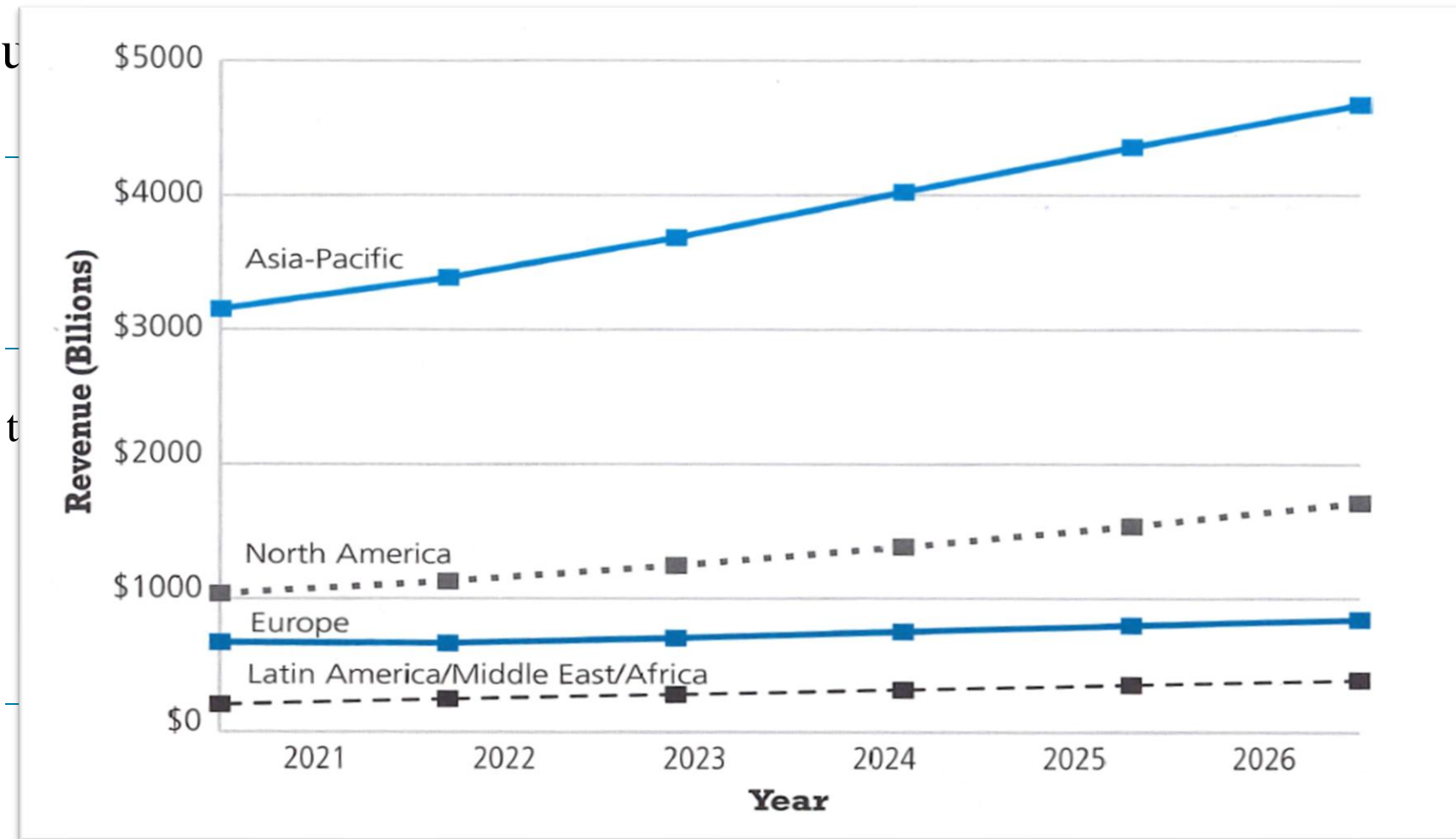
The Growth of B2C E-Commerce Worldwide

Types of E-Commerce

- Business-to-Consumer (B2C) 企業對消費者

    — The most commonly discussed type.

    最常討論的類型.

    — It includes purchases of retail goods, travel, financial, real estate, and other types of services, and online content.

    包括購買零售商品、旅游、金融、房地產和其他類型的服務，以及在綫內容.

    — The type of e-commerce that most consumers are likely to encounter.

    大多數消費者可能遇到的電子商務類型

Types of E-Commerce

- Business-to-Business (B2B) 企業對企業　　　　中國製造網

  — The largest form of e-commerce, with around $6.5 trillion in transactions in the United States in 2019.

    最大的電子商務形式, 2019 年在美國的交易額約爲 6.5 萬億美元.

  — It two primary business models used within the B2B arena: Net marketplaces and private industrial networks.

    B2B領域使用的兩種主要商業模式: 網絡市場和會員專用網絡.

Types of E-Commerce

- Consumer-to-Consumer (C2C) 消費者對消費者

— It provides a way for consumers to sell to each other, with the help of an online market maker (also called a platform provider).

它爲消費者提供了一種在網絡市場製造商（也稱爲平臺提供商）的幫助下相互銷售商品的途徑.

— The consumer prepares the product for market, places the product for auction or sale.
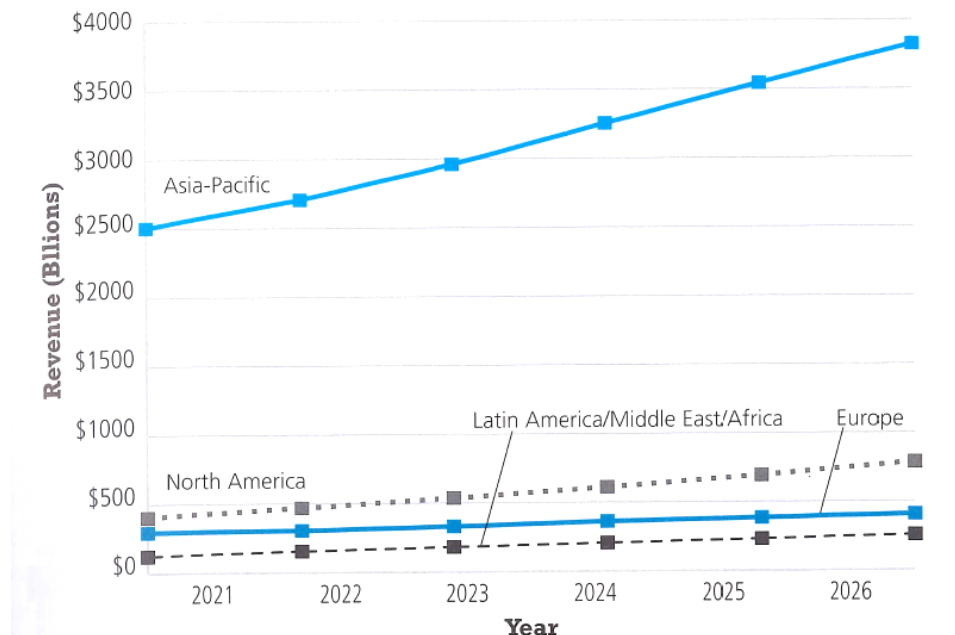
消費者爲市場準備産品，將産品用于拍賣或銷售.

Types of E-Commerce

- Mobile e-commerce (M-commerce) 移動電子商務

— It refers to the use of mobile devices to enable online transactions.
它指使用移動設備進行在線交易.

THE GROWTH OF RETAIL M-COMMERCE WORLDWIDE

Types of E-Commerce

- Social e-commerce 社交電子商務

— It is e-commerce that is enabled by social networks and online social relationships.

由社交網絡和在綫社交關係所支持的電子商務.

— Buy buttons, Shopping tabs, and virtual shops on Tiktok, Facebook, Instagram, Pinterest, YouTube, and other social networks.

Tiktok、Facebook、Instagram、Pinterest、YouTube 和其他社交網絡上的購買按鈕、購物標簽和虛擬商店.

Types of E-Commerce

• Local e-commerce 本地電子商務
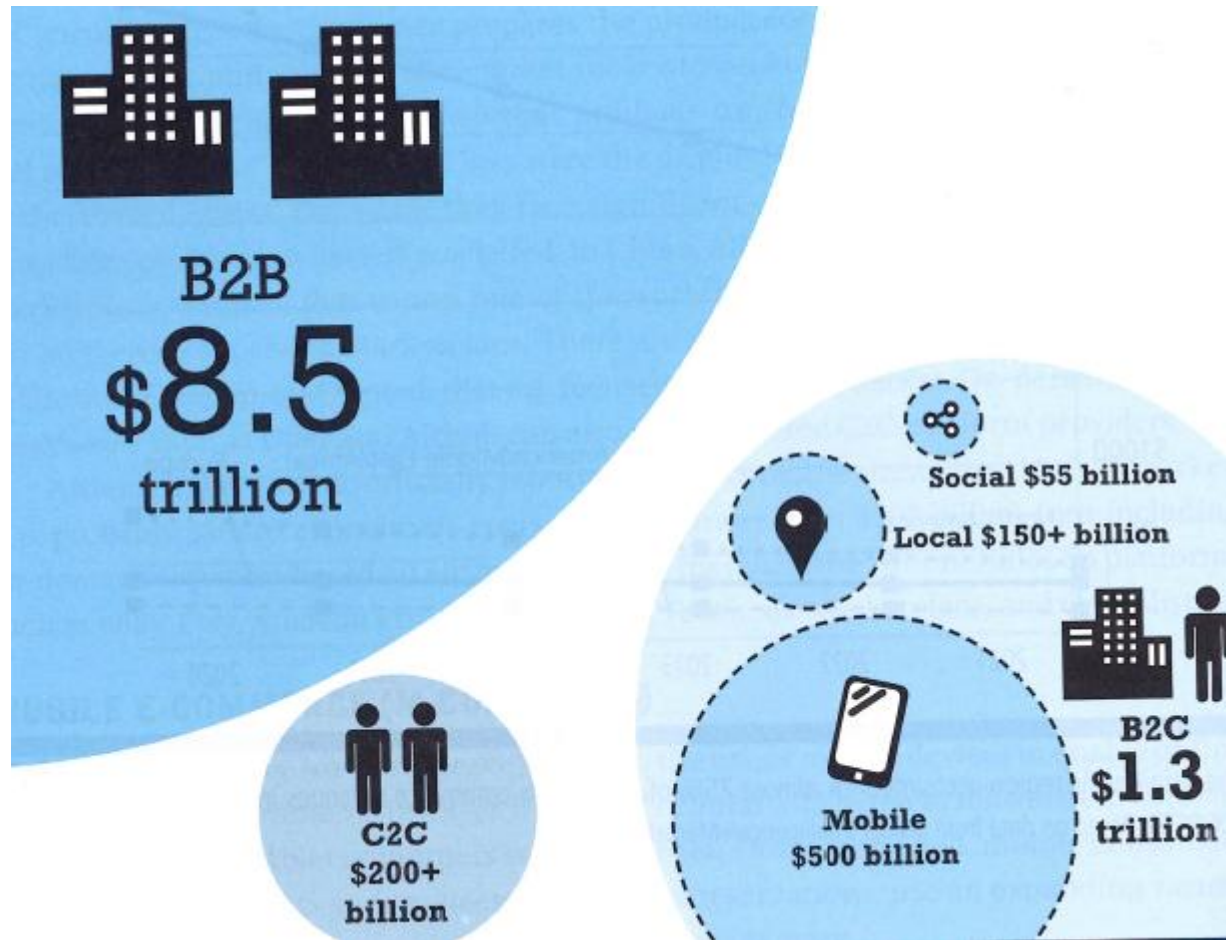
— It is a form of e-commerce that is focused on engaging the consumer based on his or her current geographic location.

專注於根據用戶當前的地理位置來開展商務活動.

— 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.

本地商家使用各種各樣的在線營銷手段來招攬消費者光顧其商店，是繼移動電子商務、社交電子商務之後出現的第三個電子商務浪潮.

Types of E-Commerce

B2B
$8.5 trillion

C2C
$200+ billion

Social $55 billion
Local $150+ billion

Mobile
$500 billion

B2C
$1.3 trillion

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

Types of E-Commerce

TYPE OF E-COMMERCE	EXAMPLE
B2C—business-to-consumer	Amazon is a general merchandiser that sells consumer products to retail consumers.
B2B—business-to-business	Metalshub is an independent third-party marketplace that serves the paper industry.
C2C—consumer-to-consumer	Online platforms such as eBay, Etsy, and Gumtree enable consumers to sell goods directly to other consumers. Airbnb and Uber provide similar platforms for services such as room rental and transportation.
M-commerce—mobile e-commerce	Mobile devices such as tablet computers and smartphones can be used to conduct commercial transactions.
Social e-commerce	Facebook is both the leading social network and social e-commerce platform.
Local e-commerce	Groupon offers subscribers daily deals from local businesses in the form of Groupons, discount coupons that take effect once enough subscribers have agreed to purchase.

MAJOR TYPES OF E-COMMERCE EXAMPLE

E-Commerce: A Brief History

- Precursors 初期
  - The late 1970s, Baxter Healthcare modem-based system
  - The 1980s, Electronic Data Interchange (EDI) standards
  - In 1981, French Minitel, the first large-scale digitally enabled transaction system in the B2C arena

B2C领域首个大规模数字化交易系统

However, none of these precursor systems had the functionality of the Internet. Generally, when we think of e-commerce today, it is inextricably linked to the Internet. According to the book, our class will say e-commerce begins in 1995.

但是，這些電子商務的先驅系統都無法與互聯網的強大功能相提并論.今日，一提起電子商務就會想到互聯網.根據我們的課本，電子商務是從1995年開始的.

E-Commerce: A Brief History

- 1995–2000: 電子商務的成長期
  - Sell retail goods, usually quite simple goods, on the Internet

    在互聯網上銷售商品，而且通常是很簡單的商品

  - Limited bandwidth and media

    缺少帶寬和媒介

  - Dot-com crash of 2000

    2000年的金融危機

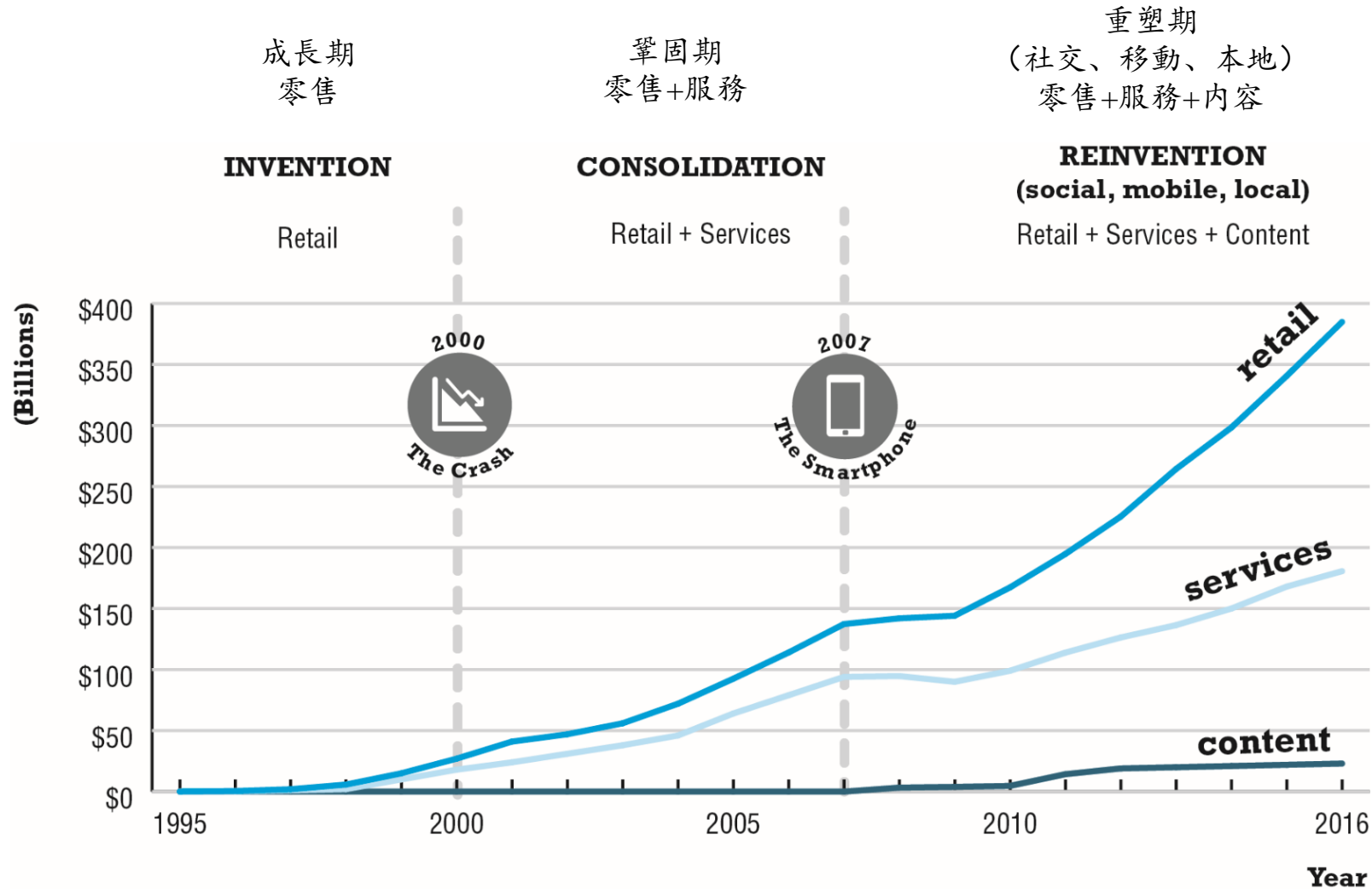# E-Commerce: A Brief History

- 2001–2006: 電子商務的鞏固期
  - Emphasis shifted to a more "business-driven" approach rather than being technology driven
    電子商務的重點從"技術導向"轉爲"業務導向"
  - large traditional firms learned how to use the Web to strengthen their market positions
    大型企業學會如何使用萬維網來加強市場地位
  - More complex products and services sold
    銷售更複雜的産品和服務
  - Growth of search engine advertising
    搜索引擎廣告的增長

E-Commerce: A Brief History

- 2007–Present:: 電子商務的重塑期
  - Rapid growth of:
    - Web 2.0: A set of applications and technologies that enable user-generated content, such as online social networks, blogs, video and photo sharing sites, and wikis

      Web 2.0是一系列支持用戶生成內容的應用程序和技術的集合，如在線社交網絡、博客、視頻和照片分享網站、wiki等
    - Mobile platform

E-Commerce: A Brief History

成長期
零售

鞏固期
零售+服務

重塑期
（社交、移動、本地）
零售+服務+內容

PERIODS IN THE DEVELOPMENT OF E-COMMERCE

E-Commerce: A Brief History

1995–2000 INVENTION	2001–2006 CONSOLIDATION	2007–PRESENT REINVENTION
Technology driven	Business driven	Mobile technology enables social, local, and mobile e-commerce
Revenue growth emphasis	Earnings and profits emphasis	Audience and social network connections emphasis
Venture capital financing	Traditional financing	Return of venture capital financing; buy-outs of startups by large firms
Ungoverned	Stronger regulation and governance	Extensive government surveillance
Entrepreneurial	Large traditional firms	Entrepreneurial social, mobile, and local firms
Disintermediation	Strengthening intermediaries	Proliferation of small online intermediaries renting business processes of larger firms
Perfect markets	Imperfect markets, brands, and network effects	Continuation of online market imperfections; commodity competition in select markets
Pure online strategies	Mixed "bricks-and-clicks" strategies	Return of pure online strategies in new markets; extension of bricks-and-clicks in traditional retail markets
First-mover advantages	Strategic-follower strength; complementary assets	First-mover advantages return in new markets as traditional web players catch up
Low-complexity retail products	High-complexity retail products and services	Retail, services, and content

EVOLUTION OF E-COMMERCE

The First Wave of Electronic Commerce 1995-2003

- 1997-2000

  ➤ More than 12,000 Internet businesses were started (invested more than 100 billion US dollars)

    超過12,000家互聯網企業開業 （投入1000多億美元）

- 2000-2003

  ➤ More than 5,000 start-ups went out of business

    超過5,000家初創企業倒閉

  ➤ Extensive coverage of "dot.com bust"

    ".com破滅"的報道鋪天蓋地

  ➤ $200 billion spent on bailing out and starting businesses. Set the stage for significant future growth

    2,000億美元用于救助和創業. 爲未來的顯著增長奠定基礎.

The Second Wave of Electronic Commerce 2004-2009

- Expanding international scope
  電子商務的國際化
- Established companies used own funds to finance gradual expansion
  公司使用自有資金來擴大融資機會
- Faster, less expensive Internet technologies available
  更快, 更便宜的互聯網技術
  - Increase in broadband connections a key element of the B2C component of this wave
    寬帶連接的增加是第二次電子商務浪潮中B2C的一個關鍵因素
- E-mail became an integral part of marketing and customer contact
  電子郵件整合到營銷和客戶溝通的策略中

The Third Wave of Electronic Commerce 2010-Present

- Factors in the third wave
  第三波浪潮的因素
  - Critical mass of mobile users with powerful devices
    使用功能強大的移動設備用戶數量形成臨界規模
    - Increased availability of smartphones and tablets
      智能手機和平板電腦的普及
    - Mobile apps used for over 40% of online sales
      超過40%的在綫銷售額來自移動應用
  - Increase in electronic commerce activity
    電子商務活動的增加
    - Growing number of people using handheld devices to access the Internet
      越來越多的人使用手持設備訪問互聯網
  - Widespread participation in social networking
    廣泛參與社交網絡
    - Businesses can use social commerce to advertise, promote or suggest specific products and services
      企業可以使用社交商務來宣傳、促銷或推薦特定的産品和服務

The Third Wave of Electronic Commerce 2010-Present

- Increased online participation by smaller businesses in sales, purchasing, and capital-raising activities

  小企業參與到網上的銷售、采購和融資活動

- Sophisticated analysis of data companies collect about online customers

  對公司收集到的在綫客戶數據進行複雜分析

- Increased integration of tracking technologies into B2B electronic commerce and the management of business processes within companies

  追踪技術與B2B電子商務的集成、以及與公司內部業務流程的整合在不斷增加

Key characteristics of the first three waves of electronic commerce

Electronic Commerce Characteristic	First Wave	Second Wave	Third Wave
International Character of Electronic Commerce	Dominated by U.S. companies	Global enterprises in many countries participating in electronic commerce	Emergence of China, India, Brazil, and other countries as major centers of electronic commerce activity
Languages	Most electronic commerce Web sites in Englis	Many electronic commerce Web sites available in multiple languages	English is no longer the dominant language on Web sites worldwide
Funding	Many new companies started with outside investor money	Established companies funding electronic commerce initiatives with their own capital	Wide variety of funding sources available, including crowdsourcing
Connection Technologies	Many electronic commerce participants used slow Internet connections	Rapidly increasing use of broadband technologies for Internet connections	High bandwidth mobile telephone networks become an additional important connection technology
Contact with Customers	Unstructured e-mail communication with customers	Customized e-mail strategies are integral to customer contact	Social networking tools are important additions to e-mail contact
Advertising and Electronic Commerce Integration	Reliance on simple forms of online advertising as main revenue source	Use of multiple sophisticated advertising approaches and better integration of electronic commerce with existing business processes and strategies	Increasingly, advertising and marketing strategies are driven by available online communication technologies
Distribution of Digital Products	Widespread piracy due to ineffective distribution of digital products	New approaches to the sale and distribution of digital products	Sale and distribution of digital products becomes commonplace
First-mover Advantage	Rely on first-mover advantage to ensure success in all types of markets and industries	Realize that first-mover advantage leads to success only for some companies in certain specific markets and industries	First-mover advantage no longer seen as a key element in electronic commerce initiatives

Understanding E-Commerce: Organizing Themes

- No single academic discipline is prepared to encompass all of e-commerce.

  沒有哪個獨立的學科能囊括電子商務的所有內容.

- According to the book, e-commerce can be considered as involving three broad interrelated themes: technology, business, and society (Do not mean to imply any ordering of importance here).

  根據課本，把電子商務看作是由三個相互聯係的寬泛主題所組成：技術、商務、社會（順序不代表重要性）.

Understanding E-Commerce: Organizing Themes

- Technology:
  - The development and mastery of digital computing and communications technology is at the heart of the newly emerging global digital economy we call e-commerce.

    數字計算和通信技術的發展是我們稱之爲電子商務的新興全球數字經濟的核心.

- 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.

    在技術奠定了基礎後，接下來就是商務應用——它可以帶來投資回報的巨大潛力——從而創造了電子商務的吸引力，活躍了電子商務.

- Society:
  - Primary societal issues：Intellectual property, individual privacy, public welfare policy

    社會問題：個人隱私、知識產權和公共福利政策.

Computer Technology

Mainframe Computers
- 1950 – 1975

Minicomputers
1970 – 1980

Personal Computers
- 1980 – Present

Local Area Networks Client/Server Computing
1980 – Present

Enterprise-wide Computing
- 1990 – Present

Internet and Web Mobile Platform Cloud Computing
1995 – Present

Business Application

Transaction automation
Payroll
Accounts receivable

Business function automation
Marketing
Human resources
Design

Desktop automation
Word processing
Spreadsheets
Databases

Workgroup automation
Document sharing
Project management
Messaging, e-mail

Enterprise-wide automation
Resource planning systems
Integrated finance-manufacturing systems
Human resource planning

Industrial system automation
Supply chain management
Customer relationship management
Channel management systems
Web and cloud services

The Internet and the Evolution of Corporate Computing

Opportunities for E-Commerce

- Electronic commerce can help increase profits and sales and decrease business costs
  電子商務可以幫助增加利潤和銷售並降低商業成本
- Virtual community: Gathering of people sharing a common interest
  虛擬社區:人們集聚在一起分享共同的興趣與愛好
- E-commerce purchasing opportunities
  電子商務采購帶來的機遇
  - Identify new suppliers and business partners
    確定新的供應商和業務合作夥伴
  - Efficiently obtain competitive bid information
    有效獲取競爭性投標信息
  - Increase speed, information exchange accuracy
    增強信息交換的速度和準確性
  - Wider range of choices available 24 hours a day
    每天24小時都可上網

Opportunities for E-Commerce

- Benefits extend to general society
  惠及整個社會
  - Lower costs to issue and secure
    降低發放和擔保成本
    - Electronic payments of tax refunds
      電子支付退稅
    - Public retirement
      公共退休金
  - Provides faster transmission
    提供更快的傳輸
  - Provides fraud, theft loss protection
    防止欺詐並減少偷盜
  - Telecommuting reduces traffic, pollution
    遠程辦公減少交通擁堵和空氣污染
  - Products and services available in remote areas
    偏遠地區可獲得產品和服務

E-Commerce: Current Barriers

- – Need for critical mass of customers with appropriate technology

    需要具備上網購物技術的足够數量的潛在購買者

- – Unpredictability in costs and revenues

    成本和收入的不可預測性

- – Insufficient tools for hardware and software integration

    硬件和軟件集成工具不足

- – Cultural and legal barriers

    文化和法律障礙

Issues That Companies Need to Solve

- Important for all businesses to establish trusting relationships with customers
  對任何企業來說，同客戶建立起信任關係是非常重要的
- Challenging for new companies because anonymity exists when trying to establish a Web presence. Planning for establishing credibility is essential
  這對新公司來說是個挑戰，因爲它們在網上面臨公司與產品都不具有名氣的難題，建立信譽的計劃至關重要
- Business must adapt to local cultures
  企業必須適應當地文化
  - "Think globally, act locally"
    "全球化思維，本地化行動"
  - Provide local language versions of Web site as customers are more likely to buy from sites in own language
    提供網站的本地語言版本，因爲客戶更願意從使用他們母語的網站上購買產品和服務

Academic Disciplines Concerned with E-Commerce

- Technical 技術
  - Computer Science, Management Science, Information Systems

    計算機科學、管理科學、信息系統

- Behavioral 行為
  - Information Systems Research, Economics, Marketing, Management, Finance/Accounting, Sociology

    信息系統研究、經濟學、市場營銷、管理、財務/會計、社會學

Exercise

1) E-commerce can be defined as:
A) the use of the Internet, the Web, and mobile apps to transact business
B) the use of any Internet technologies in a firm's daily activities
C) the digital enablement of transactions and processes within an organization
D) any digitally enabled transactions among individuals and organizations

2. _____ commerce is synonymous with *e-commerce*.

3) Which of the following statements about the Web is *not* true?
A) The Web is the technology upon which the Internet is based
B) The Web was the original "killer app"
C) The Web provides access to pages written in HyperText Markup Language
D) The Web is both a communications infrastructure and an information storage system

Exercise

4) Which of the following is *not* a unique feature of e-commerce technology?
A) interactivity
B) social technology
C) information asymmetry
D) richness

5. The _____ feature of e-commerce technology enables merchants to market and sell "complex" goods and services to consumers via marketing messages that can integrate video, audio, and text.

6. The _____ feature of e-commerce technology allows users to participate in the creation of online content.

Exercise

7. The _____ feature of e-commerce technology is related to the concept of network externalities.

8) Which of the following is a physical place you visit to conduct business?
A) marketspace
B) marketplace
C) social network
D) the Internet

9. The total number of users or customers an e-commerce business can obtain is called _____ .

Exercise

10. The first large-scale digitally enabled transaction system in the B2C arena is called _____ .

11. The year of _____ was e-commerce said to have begun.

12) All of the following are examples of Web 2.0 sites and applications *except*:
A) photo-sharing sites
B) blogs
C) wikis
D) auction sites

Exercise

13) Which of the following is *not* true regarding e-commerce today?
A) Economists' visions of a friction-free market have not been realized
B) Consumers are less price-sensitive than expected
C) There remains considerable persistent price dispersion
D) The market middlemen disappeared

14) Which business application is associated with the technological development of local area networks and client/server computing?
A) transaction automation (e.g., payroll)
B) desktop automation (e.g., word processing)
C) industrial system automation (e.g., supply chain management)
D) workgroup automation (e.g., document sharing)

15) Which of the following is one of the three primary societal issues related to e-commerce?
A) liability
B) anonymity
C) equity
D) intellectual property

Exercise

16) _____ is an example of e-business.
A) Amazon's inventory control system
B) The Amazon.com website
C) An Amazon mobile app
D) Amazon's Pinterest page

17) Which of the following was the original "killer app" that made the Internet commercially interesting and extraordinarily popular?
A) e-commerce
B) The Web
C) social networks
D) mobile apps

18) Which of the following is the best definition of transaction cost?
A) the expense of changing national or regional prices
B) the cost of participating in a market
C) the cost of finding suitable products in the market
D) the cost merchants pay to bring their goods to market

Exercise

19) Interactivity in the context of e-commerce provides which of the following functionalities?
A) the ability to physically touch and manipulate a product
B) complexity and content of a message
C) the ability of consumers to create and distribute content
D) the enabling of two-way communication between consumer and merchant

20) Which of the following refers to any disparity in relevant market information among parties in a transaction?
A) information asymmetry
B) unfair competitive advantage
C) imperfect competition
D) dynamic pricing

21. _____ refers to the complexity and content of a message.

Exercise

22) E-commerce is available just about everywhere and anytime. This is known as _____.

23) Which type of e-commerce is distinguished by the type of technology used in the transaction rather than by the nature of the market relationship?
A) consumer-to-consumer (C2C)
B) social e-commerce
C) mobile e-commerce
D) business-to-business (B2B)

24) Which of the following is an example of social e-commerce?
A) Amazon
B) eBay
C) Wikipedia
D) TikTok

Exercise

25) All of the following are considered a precursor to e-commerce *except*:
A) the development of the smartphone
B) Baxter Healthcare's PC-based remote order entry system
C) the French Minitel
D) the development of Electronic Data Interchange (EDI) standards

26) Unfair competitive advantages occur when:
A) one competitor has an advantage others cannot purchase
B) market middlemen are displaced
C) information is equally distributed and transaction costs are low
D) firms are able to gather monopoly profits

27. _____ refers to the displacement of market middlemen and the creation of a new direct relationship between producers and consumers.

Exercise

28) Which of the following is one of the three primary societal issues related to e-commerce?
A) liability
B) anonymity
C) equity
D) intellectual property

29) Which of the following statements is *not* true?
A) No one academic perspective dominates research about e-commerce
B) Economists take a purely technical approach to e-commerce
C) There are two primary approaches to e-commerce: behavioral and technical
D) Management scientists are interested in e-commerce as an opportunity to study how business firms can exploit the Internet to achieve more efficient business operations

30) The early years of e-commerce were driven by all of the following factors *except*:
A) an emphasis on exploiting traditional distribution channels
B) a huge infusion of venture capital funds
C) an emphasis on quickly achieving very high market visibility
D) visions of profiting from new technology

Exercise

Give the eight unique features of e-commerce technology.

Exercise

List and briefly explain the main types of e-commerce.